ARCHITECTURAL RECORD

BUILDING NEWS DESIGN TRENDS BUILDING TYPES

COPYRIGHT 1938 BY F. W. DODGE CORPORATION

Economy Copper Roofing

combines beauty with durability at reasonable cost

New residence at Lawrence Farms, exclusive Mt. Kisco, N. Y., development of Lawrence Management, Inc. Robert C. Lawrence, Designer. *Julio Palau,* Architect. *Scarsdale Roofing Co.,* Sheet Metal Contractor.

ANACONDA *Economy* Copper Roofing — designed for residential use—offers all the traditional advantages of a standing seam copper roof . . . beauty, charm and durability. Yet, its cost . . . due to lighter weight and correspondingly increased workability . . . is *relatively low*—a fact which has justified extensive use of durable copper roofing on better-type homes from coast to coast.

Economy Copper Roofing is furnished in sheets which provide a space of but 13¾ inches between seams. This reduced width is more in keeping with residential lines. Moreover, it gives 10-ounce copper about the same rigidity and wind resistance as heavier, more expensive material in wider widths. Detailed information on Anaconda *Economy* Copper Roofing is found in Sweet's.

Consider these 5 advantages of Economy Copper Roofing:

1. **APPEARANCE**...Copper increases in beauty with age and service.
2. **DURABILITY**...Defies time and weather.
3. **FIREPROOF**...Copper roofs eliminate the hazard of flying sparks.
4. **LIGHT WEIGHT**...Makes costly supporting structure unnecessary.
5. **COOLS QUICKLY** as soon as the sun goes down.

38130

ANACONDA

Anaconda Copper

THE AMERICAN BRASS COMPANY, General Offices: Waterbury, Connecticut

In Canada: Anaconda American Brass Ltd., New Toronto, Ont. • Subsidiary of Anaconda Copper Mining Compa y

ARCHITECTURAL RECORD

COMBINED WITH AMERICAN ARCHITECT AND ARCHITECTURE

VOLUME 84 OCTOBER 1938 NUMBER 4

BUILDING NEWS 39

NEW BUILDINGS 40–60

PLANNING DETAILS 61

NEW EQUIPMENT 62

DESIGN TRENDS 63

PRAGUE 64–72

DYMAXIONIZING THE UNIVERSE 73, 74

REVIEWS OF NEW BOOKS 75, 128, 130

TREND NOTES ON A BUILDING WORLD 76, 87, 132

CURRENT TRENDS ON BUILDING COSTS 77, 78

OUTSIDE STAIRWAYS 79–86

BUILDING TYPES 89

THE $15,000 TO $25,000 HOUSE 90

OUTDOOR LIVING AREAS 91

TIME-SAVER STANDARDS 92–95

ILLUSTRATED CASE STUDIES 96–124

(Index to Advertisements . . . Page 160)

BEHIND THE RECORD

NEXT MONTH the 1939 New York World's Fair will be previewed in the *Design Trends* section. Though this will be an exceptional feature covering many pages, it will not be to the exclusion of other RECORD features. Both the *Building News* section and the *Building Types* section will be holding up their ends.

The World's Fair study will be in three parts as follows: (I) a preview of what the editors deem to be significant new buildings. By significant, we mean those showing the greatest technical advance in production standards . . . those which we believe truly suggest "The World of Tomorrow." (II) New materials, new equipment, and new services, which measure up to our definition of news. (III) A survey of the trends in display, entertainment, food preparation, circulation, and numerous other fields, the advances in which are of immediate value to our building designers in their own work.

(*Continued on page 7*)

Editorial Director: Thomas S. Holden. *Editors:* Orville C. Anderson (*Managing*), James M. Fitch, Jr., Roger Wade Sherman. *Associate Editors:* Elisabeth Kendall, Irvin Kuper, Frank G. Lopez, Jr. *Art Director:* Gene Hawley. *Desk Editor:* William S. Pattison.

Editorial Consultant: Michael A. Mikkelsen.

Research Consultants: K. Lönberg-Holm and C. Theodore Larson.

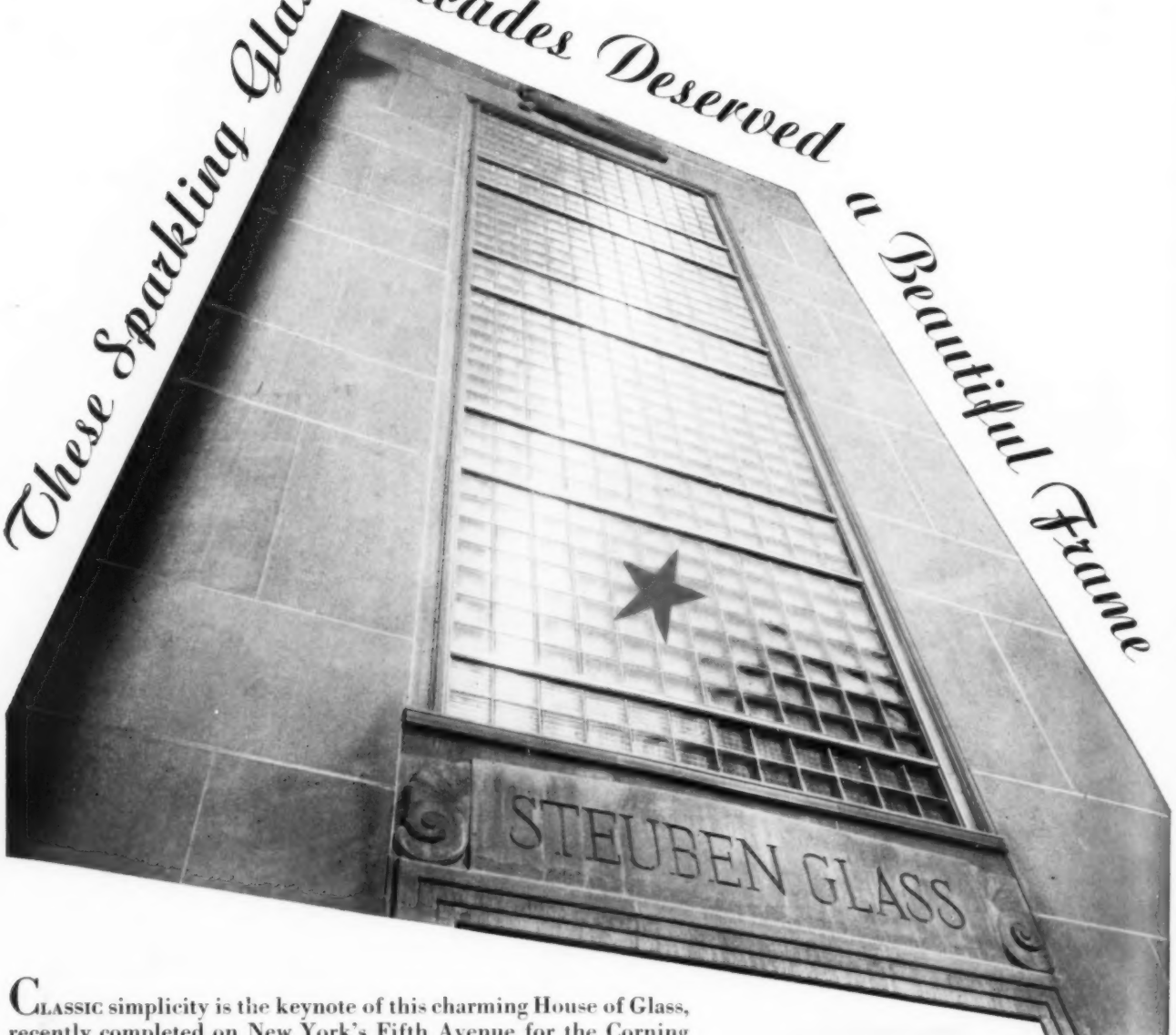
Architectural RECORD, combined with *American Architect and Architecture*, is published monthly by F. W. DODGE CORPORATION, 115-119 West 40 Street, New York. Truman S. Morgan, Pres.; Irving W. Hadsell, Vice Pres.; Thomas S. Holden, Vice Pres.; Michael A. Mikkelsen, Vice Pres.; Chauncey L. Williams, Vice Pres.; John M. Williams, Vice Pres.; Sanford D. Stockton, Jr., Sec.; Howard J. Barringer, Treas. Member Audit Bureau of Circulations and Associated Business Papers, Inc. Architectural RECORD is indexed in Readers' Guide, Art Index, and Industrial Arts Index.

Subscription Rates: United States and Possessions, Canada, Cuba, and Mexico, $3 the year, $5 for two years, $6 for three years; Elsewhere, $5 the year; Single copy, $1. *Circulation Manager:* Robert C. MacDougall.

Manuscripts, photographs, and drawings which conform to RECORD'S editorial aims are welcomed. Every effort will be made to return material (if accompanied by stamped, addressed envelopes); but the editors will not be responsible for losses.

Other Dodge Services: REAL ESTATE RECORD, SWEET'S CATALOG FILES, HOME OWNERS' CATALOGS, DODGE REPORTS, and DODGE STATISTICAL RESEARCH SERVICE

These Sparkling Glass Facades Deserved a Beautiful Frame



CLASSIC simplicity is the keynote of this charming House of Glass, recently completed on New York's Fifth Avenue for the Corning Glass Works and Steuben Glass, Inc. Obviously dominant features are the vast areas of glass block construction on both facades.

Here we see employed the most modern of present-day building materials, and happily framed within a decorative metal that is equally modern in aesthetic qualities.

Because it offered a rich pastel shade bordering on white, the architects selected Solid Nickel Silver for the outside framing of all glass areas. Altogether, 7,776 pounds of this lustrous Nickel bronze were used for both exterior and interior decorative trim.

The soft sheen of Solid Nickel Silver makes it one of the handsomest metals for ornamentation — its warm, glowing highlights blending beautifully with glass, stone, tile, marble, wood, etc.

Moreover, Solid Nickel Silver is extremely durable, possesses adequate structural strength, meets all fabricating requirements and is readily available through the usual sources of supply.

Solid NICKEL *Silver*

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N.Y.

BEHIND THE RECORD

(Continued from page 5)

If you like the *Building Types* section this month (page 89) devoted to houses costing between $15,000 and $25,000, you're in for an even better residential feature next month. The *Building Types* subject for November is "Houses—$25,000 and Up." First there will be Time-Saver Standards data somewhat extending that presented this month. For example, there will be methods of construction, areas, dimensions of: pools (fish, lily, reflecting); garden steps; retaining walls; walls above grade and other information applicable, but not especially restricted to this one price class. Illustrated case studies from various parts of the country will of course be included. Worth noting, also, will be a comparative analysis of two houses, one "traditional", one "modern." The comparison will be strictly objective, reflecting the different approaches to common problems: How are dining rooms handled in one? In the other? What about bathrooms?—circulation?—stairways?—or outdoor areas? Maybe we're leading with our chin, but we think this will be interesting.

And, to suggest further that November will be a well-balanced issue, features and all, here, in addition to the reports on new equipment, new materials, etc., are some of the new buildings which will be reported on:

An Italian airplane hangar; a Farm Security Administration project in Missouri; a bar and theater by Holabird & Root; a resort consisting of hotel, commercial center, airplane hangar, cabins, and villas; a new Rhode Island community of prefabricated houses.

Tongue in cheek?

AT LEAST two of the letters received by us lately were written by readers not with tongues in cheek but with eyebrows raised:

Sirs:

Ever since I read the piece "Frank Lloyd Wright Builds Us a Home", by Paul R. and Jean S. Hanna, in your July issue, I have intended to write and congratulate you on it.

The paragraph beginning "It was impossible to estimate the actual costs," in the second column, is a pure gem! Also the story of the brick subcontractor in the succeeding paragraph and the differentiation between "personal possessions" and the furniture and furnishings "accumulated during ten years of married life" in the paragraph next following!

When I read this piece, and again when I read your reference to it in "Behind the Record," I wondered whether your tongue was in your cheek. In any case I hope indeed that you will be able to give your readers more of such frank stories written by clients themselves.

Sincerely yours,

GAVIN HADDEN.

607 Fifth Ave.,
New York, N. Y.

Glare in churches

AND FROM Elbert M. Conover, Director of Interdenominational Bureau of Architecture, came the following friendly chiding:

"I have noted with great interest the description in your August 1938 number of the new church of St. Wenceslas in Prague. It seems to me that the architects of some churches of this type ignore practical considerations as badly as has been the case in older church construction. The architect of the interior of this church indicates that the congregation will have to sit facing the glare of a window of tremendous size. This is certainly an impracticable thing and will doubtless greatly handicap the success of worship services. Then, too, if one is to be practical, I wonder why they should have the excess of white at this end of the church. The worst feature, however, would seem to be the excessive amount of window light which the congregation will helplessly have to face should they attend services in this building."

Wherever possible, we believe, the congregations of Roman Catholic churches face the East; and the apse is traditionally lighted with large windows. We have no data on the relative glare of St. Wenceslas' apse as compared to that of Amiens, for instance. But the double-glazed windows of St. Wenceslas are of a special light-diffusing, multicolored glass.

Who reads the RECORD?

ACROSS our desk recently, and across the desks of hundreds of other magazine editors, there passed a four-page, businesslike document printed on blue paper. Although alike in format, these documents differed considerably in content. Each contained a recapitulation and detailed analysis of the subscribers to each of the magazines involved, sworn and subscribed to by the publisher in his semiannual report to the Audit Bureau of Circulations.

Our own made us give vent to a mild whistle. First, because it revealed that the RECORD now has the largest grand total circulation in its history; second, because included in this grand total are more than 10,000 architects—the largest number of architect-subscribers ever attained by the RECORD or, we believe, any other U. S. architectural journal. These, combined with thousands of engineers, draftsmen, students, landscape architects, etc., make up the RECORD audience.

(Continued on page 8)

"I think it's your new architect—they say he makes a thorough study of the owner's habits before designing a house—" —Drawn for the RECORD by Alan Dunn

BEHIND THE RECORD

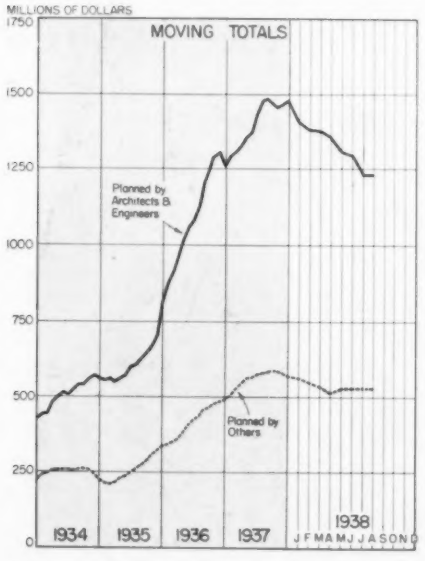
Of great interest is the geographical distribution of these readers:

Location	Percentage of Total
New England States	7
Middle Atlantic States	26
South Atlantic States	9
East North Central States	18
East South Central States	3
West North Central States	6
West South Central States	5
Mountain States	2
Pacific States	11
Territories, Canada and Foreign	13
	100%

Thus we get another glimpse behind the RECORD. In addition to our using F. W. Dodge statistics for determining in what proportion various classes of buildings should be treated to correspond to market conditions, here is another systematic approach for determining in what proportion various localities should be represented in the RECORD in the course of a year.

Maybe it's because we make use of these and other yardsticks that the readership is mounting. We hope so.

WHO BUILDS AMERICA?



Buildings planned by architects and engineers account for 69% of the total value of all building contracts awarded in the 37 Eastern states, according to F. W. Dodge Corporation reports. The curves on the above chart represent the moving annual totals of building contract awards. Each figure plotted for a given month represents the total for the twelve-month period ending with that month. This type of curve registers the trend and eliminates the seasonal factor.

Signature plates

WE TRUST that publication of the following excerpts from a letter will not backfire and bring to our desk the charge that perhaps *Behind the Record* doesn't live right. But it was a forthright document, and since we know from correspondence that at least two or three readers are on the hunt for such a service, here goes:

Sirs:

About a year ago we started a movement amongst architects to sign every building and this movement has been gaining force. . . .

We therefore brought out a folder . . . the idea being that we would give any architect twelve of these signature

Lead Industries Association

plates, made to his own design, for $12.00 . . . each of these plates costs us . . . about $1.25. However, we are doing this in a spirit of cooperation, hoping that it will acquaint us better with architects. . . .

KENNETH LYNCH, President,
Kenneth Lynch & Son, Inc.
8-14 Thirty-seventh Ave.,
Long Island City, N. Y.

Changes of address

THE RECORD publishes changes of address only on request, making no attempt to keep a day-to-day account. The only organization in the country with facilities for this is *Sweet's Catalog Service*, whose painstakingly maintained list undergoes an average of 23 changes per day for every working day in the year. Below are the changes recently brought to our attention.

Frank H. Day and *Conway L. Todd* announce the formation of a partnership for the general practice of architecture under the firm name of Day and Todd with offices at 31 Gibbs St., Rochester, N. Y. . . . *C. A. Woodruff*, mechanical and electrical engineer in consultation will also have offices at 31 Gibbs St., Rochester, N. Y. . . . *Mrs. Orlo Heller* formerly of Bortick Studio, 64 W. 9th St., New York City, has become assistant professor of Decorative Design at the University of Michigan, Ann Arbor, Mich., and will carry on her decorative and industrial design consultation from that location. . . . *Raymond C. Whitaker*, architect, announces the opening of an office at 419 Union Bank Bldg., Davenport, Iowa. . . . *William A. Mitchell* announces the removal of his office to 148 Gallows Hill Road, Westfield, N. J. where he will continue to engage in the practice of architecture. . . . *Louis G. Restone*, architect, announces the change of his offices from 3513 Woodward Ave., to 3510 Woodward Ave., Detroit, Mich.

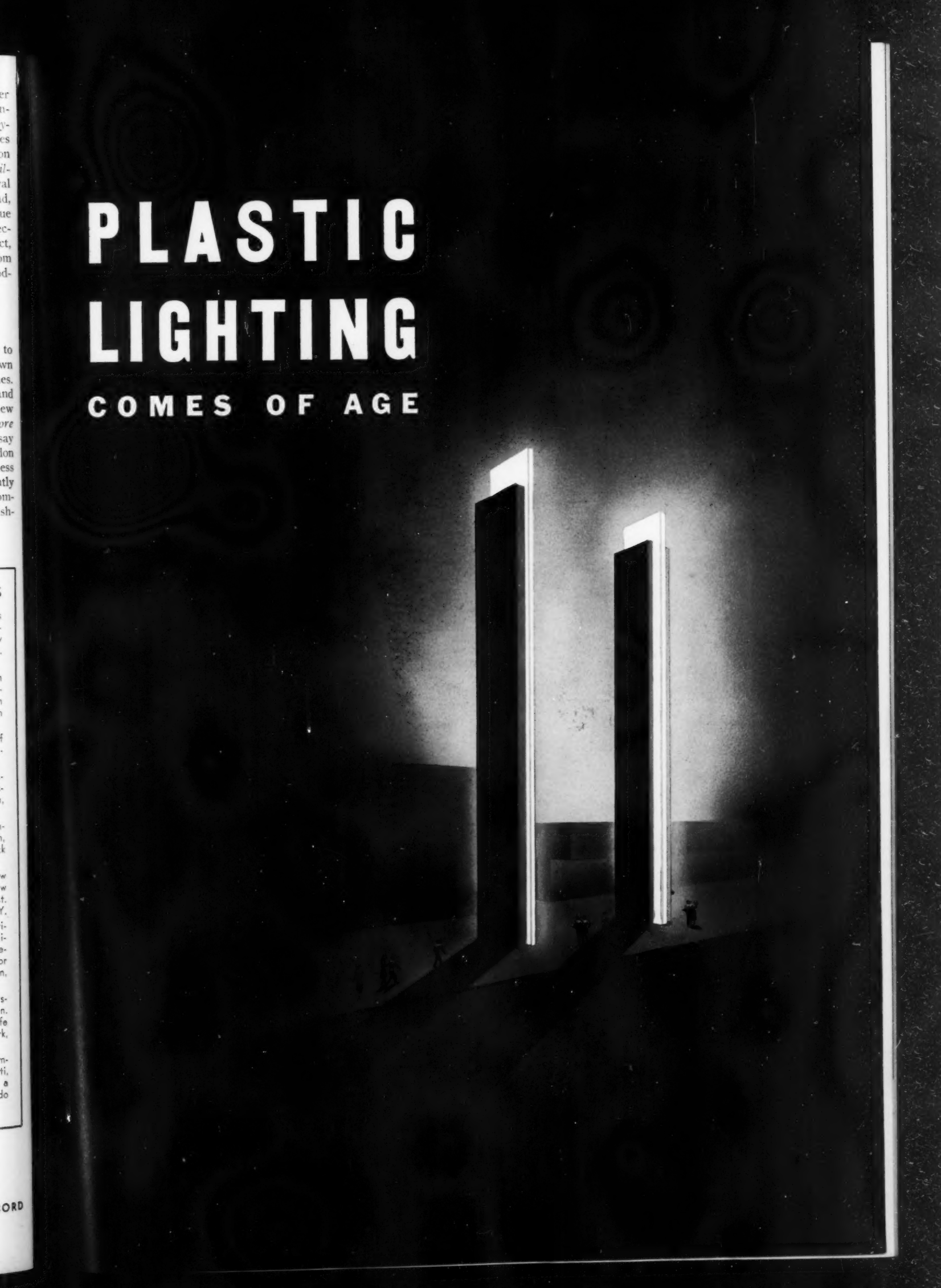
Correction

SINCE no one else called our attention to an error recently, we formed our own posse and began beating the bushes. About nightfall we uncovered one, and a neat little trick it was. In our review last month of Claude Bragdon's *More Lives Than One*, we started out to say that, among other things, Mr. Bragdon was an *occultist*. But our printer, bless his conscientious soul, apparently thought this a little brash, and compromised on occulist. Magazine publishing is such interesting work.

CALENDAR OF EVENTS

- **October 5**—First in series of lectures on Contemporary Housing and Rehousing by five USHA members. New School for Social Research, 66 W. 12th St., New York, N. Y.
- **October 8–December 4** — Exhibition of Photographs of Domestic Architecture in New England and New York in 17th and 18th Centuries. Metropolitan Museum of Art, New York, N. Y.
- **October 11 – 14** — Convention of American Institute of Steel Construction. French Lick Springs, Indiana.
- **October 17–19**—Fourth Annual Convention, National Society of Professional Engineers, Hotel William Penn, Pittsburgh, Pennsylvania.
- **October 21–22**—Fourth Meeting, Industrial Unit Heater Association, French Lick Springs Hotel, French Lick Springs, Ind.
- **October 27–29**—Convention of New York Association of Architects with New York Chapter of AIA acting as host. Hotel Pennsylvania, New York, N. Y.
- **October 31**—Closing date, competition for design of buildings for University of El Salvador. Address requests for information to Director General of the Pan American Union, Washington, D. C.
- **November 1**—Closing date, Pittsburgh Glass Institute Competition. Architectural Forum, Time and Life Building, Rockefeller Center, New York, N. Y.
- **November 27**—Closing date, Competition for Monument to Jose Marti, Cuban patriot. Pro-Monumento a Marti, Comision Central, Empedrado 5, Havana, Cuba.

PLASTIC LIGHTING COMES OF AGE



PLASTIC LIGHTING COMES OF AGE

SCIENTIFIC LIGHTING is a comparatively new achievement. Note the former character of the illumination in Columbia Library, at Teachers' College, Columbia University, New York, and the remarkable result below . . .

. . . AFTER Beetle plastic reflectors, designed in accordance with correct lighting standards, were installed. Note particularly the soft, even light distribution, absence of glare and elimination of "dark spots."

Photographs on these pages reproduced through the courtesy of Ainsworth Lighting, Inc., Bryant Electric Company, Chase Brass & Copper Company, Markel Electric Products Co., Inc., and Waterbury Button Company, Lighting Division.

IT WAS just a little more than three years ago that the first translucent plastic lighting reflector was molded of Beetle* and placed on the market.

In this comparatively short period the use of this unusual plastic in the lighting field has increased so rapidly that the success and acceptance it has achieved is nothing short of phenomenal.

Lamp manufacturers have been quick to see the improved lighting values and the reduced production costs it brings. Architects have welcomed it as the solution to many difficult illuminating problems. Officials in manufacturing plants, business offices, hospitals, schools, banks, libraries and other institutional buildings have accepted it as a highly important contribution to better lighting at lower cost.

Patently, to achieve such wide acceptance in so short a time, Beetle must possess characteristics that offer exceptional advantages. These advantages stem from the basic composition of the material itself. In natural unpigmented form it is highly translucent and gives excellent light transmission and diffusion. And because the degree of opacity of Beetle can be varied at will in its preparation as a raw material,

**Trade-mark of American Cyanamid Company applied to urea products manufactured by it.*

An advertisement of the Beetle Products Division of American Cyanamid Company, 30 Rockefeller Plaza, New York N. Y.

BEETLE LEADS WITH BETTER LIGHT

molded pieces can be produced to give exactly the ratios of reflection and transmission desired for specific purposes.

This ready adaptability to varying demands is peculiar to urea plastics and is a feature possessed by few other materials.

In addition, molded Beetle reflectors and shades are light in weight, which, combined with their shatter-proof qualities, gives them a safety factor greatly above that of ordinary reflectors and, at the same time, reduces breakage and cleaning costs.

Beetle reflectors can be produced in any color or shade, which can be duplicated with unvarying accuracy, and the architect who specifies them can be certain the color will neither fade, wear off, nor run—because Beetle color is all-through color, an integral part of the material itself.

These advantages derive from the chemical and physical characteristics of Beetle. Another factor contributing to its success is the steady improvement in technique and equipment of molding, which enables manufacturers to produce a wider variety of reflectors with greater uniformity at lower costs.

BEETLE reflectors are in the office of General Foods . . .

N. Y. FEDERAL RESERVE BANK has adopted plastic lighting . . .

PERSHING SQUARE BUILDING, N. Y., has replaced obsolete equipment with Beetle plastic reflectors . . .

HOSPITAL reception room presents bright, cheery atmosphere . . .

AN OFFICE of the Chase Brass & Copper Co., Waterbury, Conn. . . .

An advertisement of the Beetle Products Division of American Cyanamid Company, 30 Rockefeller Plaza, New York, N. Y.

PLASTIC LIGHTING COMES OF AGE

DOCTORS appreciate clean, sanitary appearance . . .

MODERNIZED to look larger, brighter, more attractive . . .

MERCHANDISE is displayed to better advantage . . .

Beside being superior in practically all respects to any similar products yet developed they can thus be offered to the consumer at lower prices than ever before paid for value received.

It is natural that such an important development in the lighting field should receive the interested attention of the Illuminating Engineering Society. Under their auspices, a thorough investigation was conducted in the Electrical Testing Laboratories. Tests were made to determine Beetle's qualities of lighting transmission, diffusion and elimination of glare. Accelerated exposure and aging tests were conducted to measure its heat resistance and durability. In short, no factor that would have any effect on lighting efficiency was overlooked. The resulting evaluation was exceedingly favorable. Beetle was found to be the "optical equivalent of opal glass" and approved by the ETL for use with the IES portable lamps.

Good lighting is a scientific achievement. Beetle as a lighting material has been scientifically developed from the start. It was made possible by research in the laboratories of the American Cyanamid Company. It is a chemical product—not an accidental discovery that has been adapted to lighting purposes—but the result of chemical research directed to produce a new material that would do a specific lighting job in a more thoroughly scientific manner . . . and the extensive facilities that made its development possible are being used constantly to improve its usefulness and adapt it to the solution of further specific lighting problems.

SHOWROOMS are more pleasant, colors more natural . . .

PLASTIC REFLECTORS are available for all tastes, pocketbooks, wattages . . . both commercial and residential.

An advertisement of the Beetle Products Division of American Cyanamid Company, 30 Rockefeller Plaza, New York, N. Y.

BEETLE LEADS WITH BETTER LIGHT

BEETLE TRANSLUCENT LAMINATED —ANOTHER FORWARD STEP IN MODERN DECORATIVE LIGHTING

Following the introduction of the translucent molded Beetle reflector the American Cyanamid Laboratories developed a companion product—Beetle Translucent *Laminated*—a material which is extremely versatile for decorative lighting purposes.

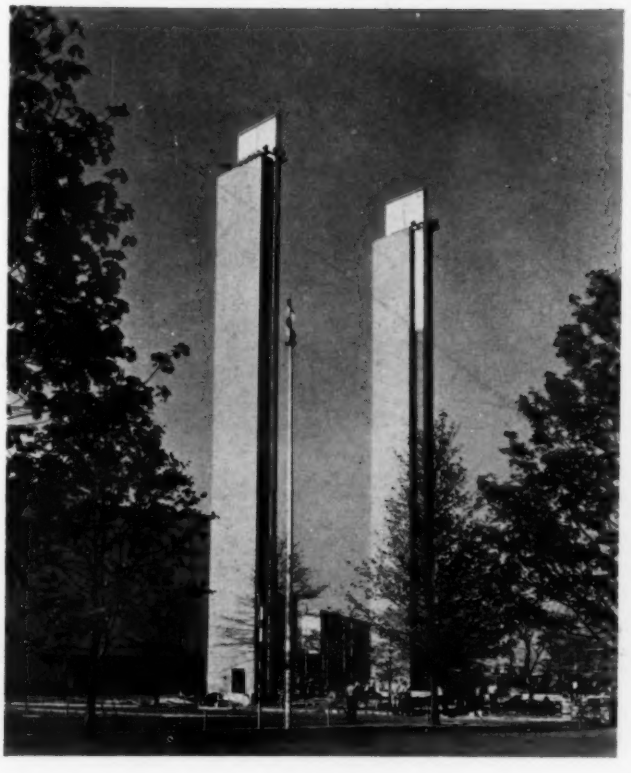
Formed in large flat sheets, this material has a high degree of translucency yet gives excellent light diffusion, is strong, durable, and because of its flexibility offers interesting possibilities for cove, trough, pillar and corner lighting as well as for panels in lobbies, bars, restaurants, stores and other places where modern decorative ideas can be used to create a cheerful, hospitable atmosphere. Here the light weight and shatter-proof qualities of Translucent Beetle are of great importance because of the greater safety required and the reduced handling, installing and cleaning costs. Theatre marquees in which bright illumination is required, and frequent changes in decorative lettering must be made, particularly benefit by the use of this light weight plastic, not only as a result of less breakage but because of the reduced danger.

One of the most interesting applications of this unusual product is its use in illuminated display and advertising. A sheet may be laminated to carry as an integral part of its composition any design; water color drawing, a photograph or a lettered advertising message. It gives excellent visibility to these designs and at the same time protects them against sun and weather. It is being used with great success in the construction of exit signs, road guides, night club decorations, photo-murals, and outdoor and indoor advertising displays. Beetle's brilliant colors, their permanence and the spectacular effects obtained by the diffusion of light give promise of considerable further applications along this line.

Sheets of Beetle Tranlucent Laminated are available in a wide range of colors, sizes and thicknesses to meet individual job requirements. Technical data regarding its adaptability for new applications are constantly being collected. Inquiries for further information should be addressed to Beetle Products Division, American Cyanamid Company, 34 Rockefeller Plaza, New York, N. Y.

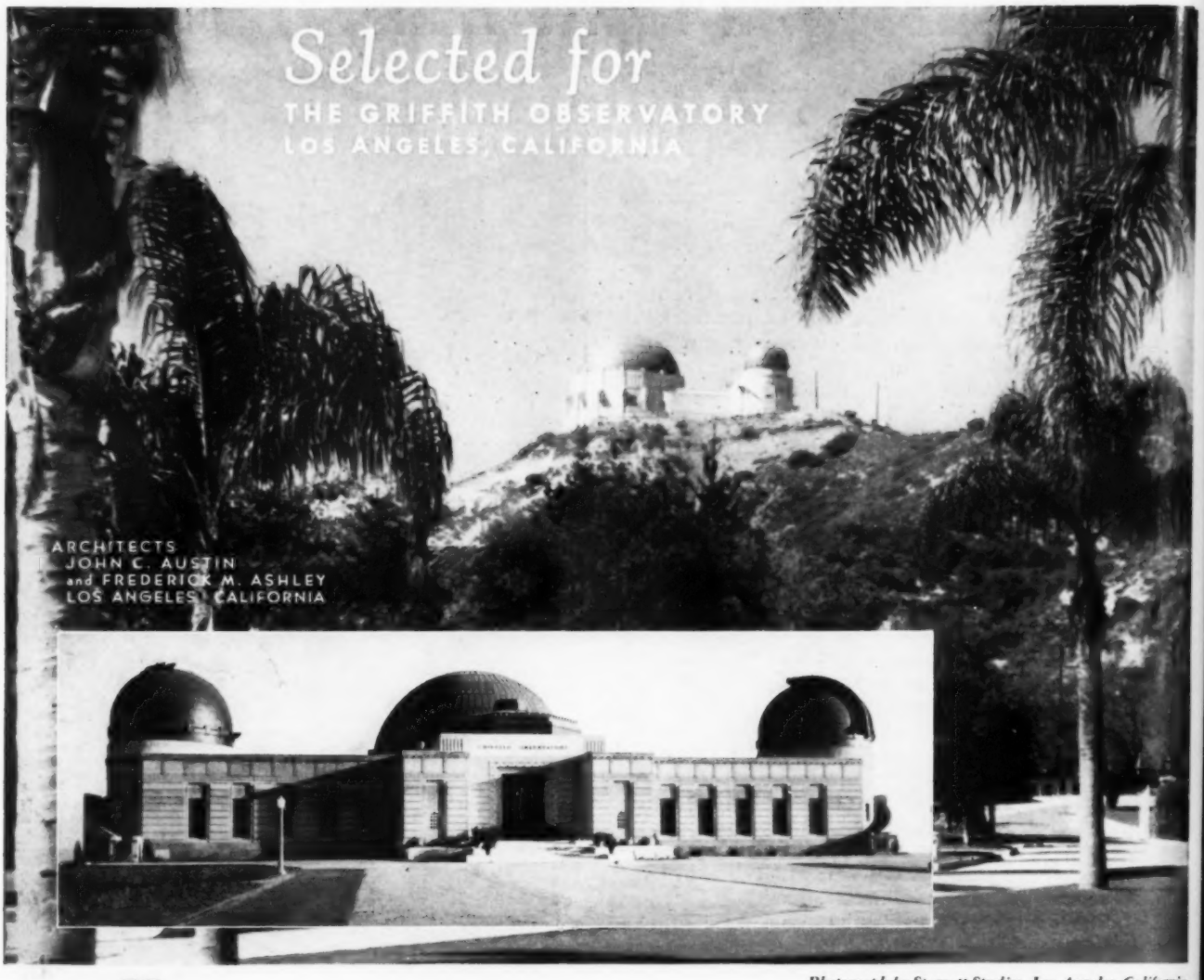
TRANSLUCENT BEETLE LAMINATED is flexible . . .

FOR DISPLAY or decoration in illuminated panels . . .



AT THE WORLD'S FAIR, Beetle Translucent Laminated on Illuminated pylons . . . for lighting Information Booth.

An advertisement of the Beetle Products Division of American Cyanamid Company, 30 Rockefeller Plaza, New York, N. Y.



Photograph by Starrett Studios, Los Angeles, California

Steelcrete

BAR-Z-PARTITIONS

Protect the Beauty of Plastered Walls

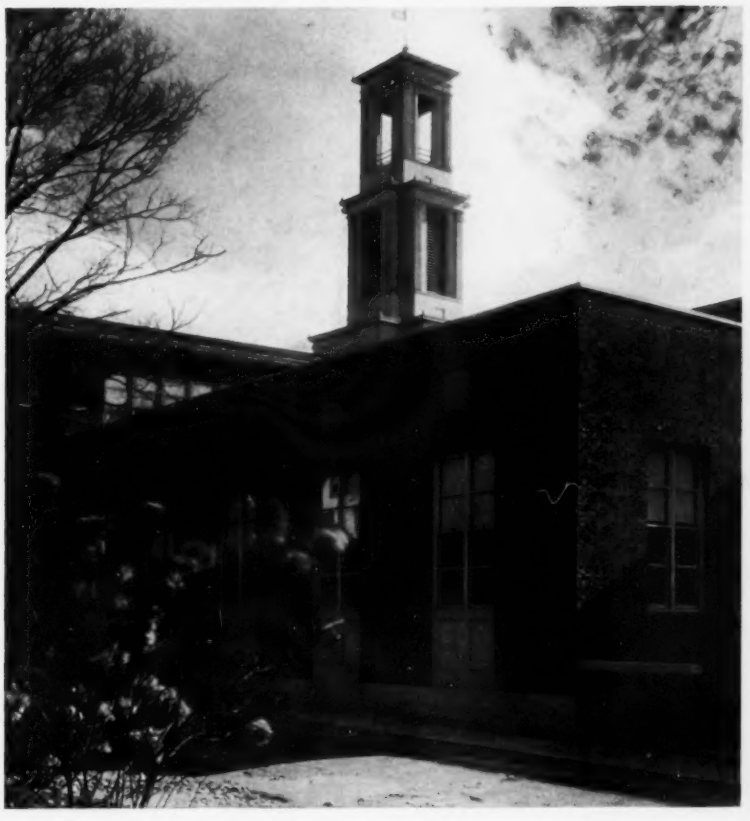
The selection of Steelcrete Bar-Z-Partitions for the interior plastered walls of the Griffith Observatory is further significant proof of the superior crack-preventing qualities of this system of partition construction. Bar-Z-Studs provide a rigid support that will not split, swell or warp. When used with Bar-X-Lath—the reinforced Diamond Mesh Lath with twin welded bars running the length of each sheet—they provide an ideal base for plastering. Ask for a copy of the new Steelcrete Bar-Z-Partition catalog.

The CONSOLIDATED Expanded Metal COMPANIES

WHEELING, WEST VIRGINIA

Branch Offices and Warehouses: NEW YORK · CHICAGO · CINCINNATI · CLEVELAND · PITTSBURGH · PHILADELPHIA
BOSTON · BUFFALO · HOUSTON · ATLANTA. *Export Offices:* 330 WEST 42ND ST., NEW YORK, N. Y.
Pacific Coast Representative: SOULE STEEL COMPANY, SAN FRANCISCO · LOS ANGELES · PORTLAND

BUILDING NEWS

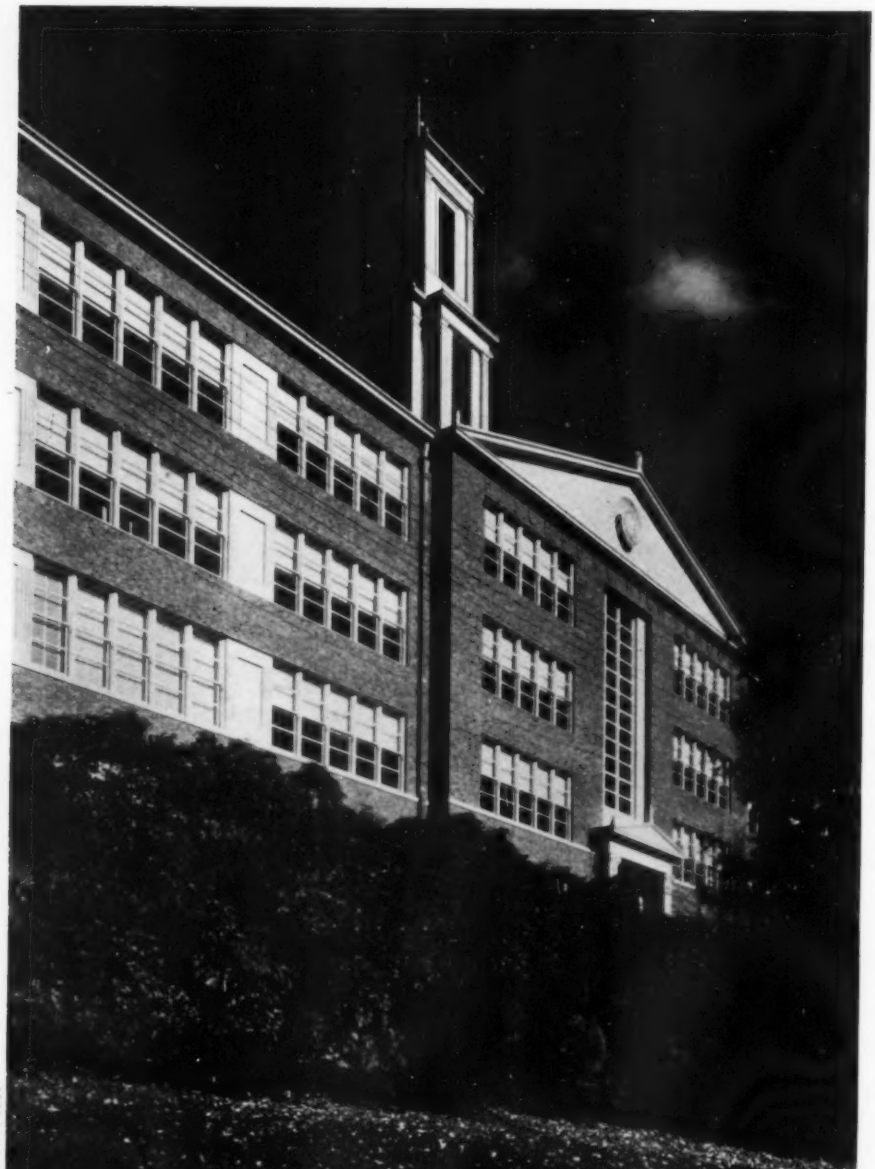


Paul J. Weber

From Boston's classicists, a new use of Greek Revival . . .

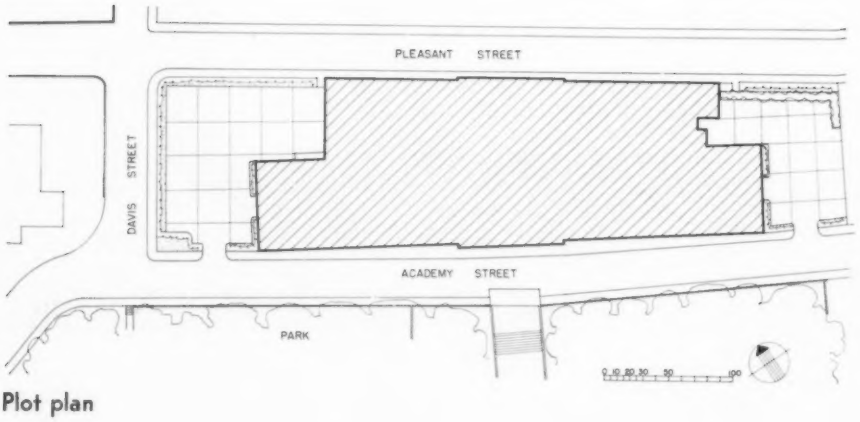
ARCHITECTURAL RECORD
COMBINED WITH
AMERICAN ARCHITECT AND ARCHITECTURE

MODERN AND NEO-GREEK COMBINED IN NEW ENGLAND HIGH SCHOOL



Paul J. Weber

Front elevation from park



Plot plan

COOLIDGE SHEPLEY BULFINCH and ABBOTT
Architects

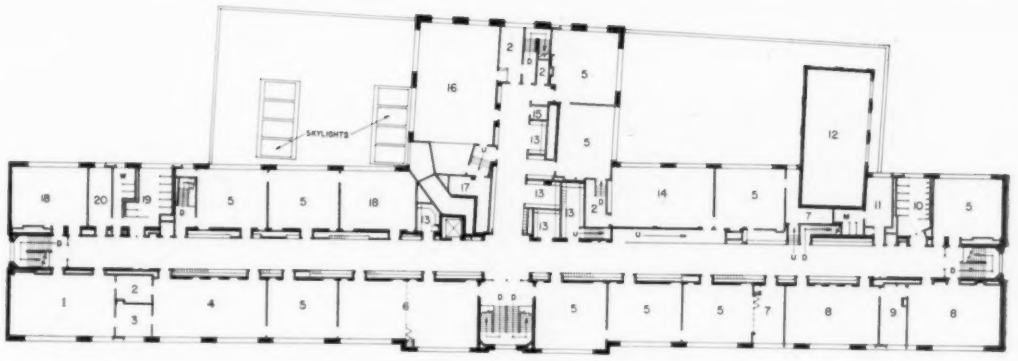
A BOSTON FIRM, long famous for its precise rendering of the Colonial and Georgian vernacular at Harvard University, has recently completed this new building for the Fitchburg (Mass.) High School. Shifting their medium somewhat, the architects have here employed a greatly simplified Greek Revival, which permits the juxtaposition of Classic and contemporary detail (pedimented doorways alongside horizontal spandrels and muntins) in such a fashion as materially to reduce the "fussiness" often found in designs employing the Colonial vernacular.

Plan of the building—which replaces an earlier school destroyed by fire—was determined by a small and irregular plot. Although a street separates them, the school overlooks and its students use the city park on the south. The slope of the plot is such that direct access to both auditorium and gymnasium is provided on the north, while main entrances to classroom areas are on the lower level to the south. This ground floor is largely given over to administration, staff and gymnasium activities, while classroom areas are concentrated along the southern front of the three top floors. A maximum student population of 1,600 is thereby provided for.

Exterior walls of the school are of red water-struck brick with Fitchburg granite trim. The cornice is leaded copper with wood and copper cupola; soffits of all cornices are painted vermilion. The entire structure is second-class fireproof construction, fully sprinkled, with first-class fireproof construction in all corridors and stairways. The school is almost entirely heated by warm air, circulated by ducts from a central heating plant.

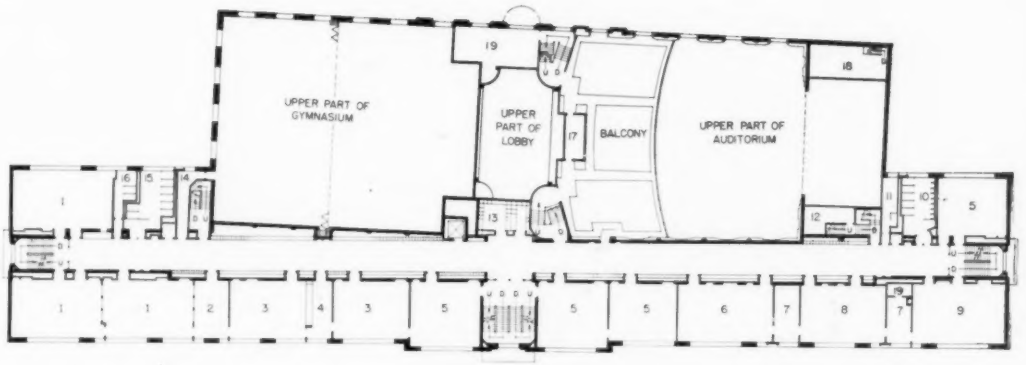
Third floor

1. Food laboratory
2. Stores
3. Demonstration
4. Sewing laboratory
5. Classroom
6. Study
7. Office and bookroom
8. Biology laboratory
9. Preparation
10. Boys' toilet
11. Men teachers
12. Scenery hoists
13. Locker alcove
14. Freehand drawing
15. Rectifier
16. Oral English and music
17. Instrument room
18. Bookkeeping
19. Girls' toilet
20. Girls' rest room



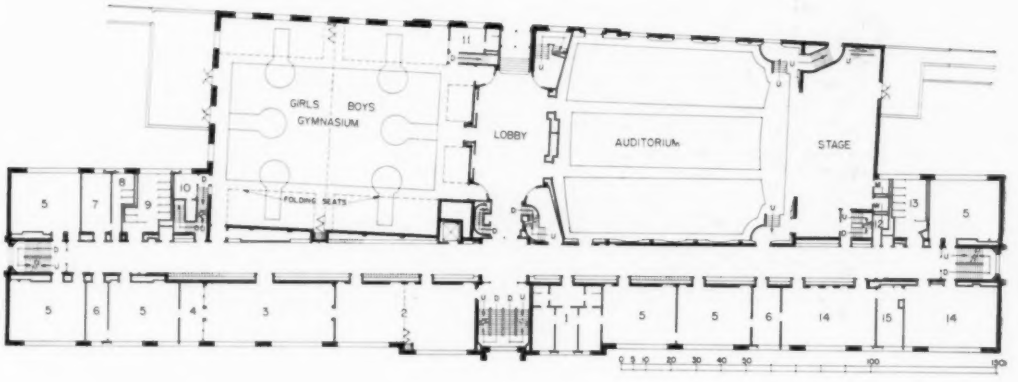
Second floor

1. Typewriting
2. Office machines
3. Bookkeeping
4. Bank
5. Classroom
6. Physics laboratory
7. Prep room
8. Lecture room
9. Chemistry laboratory
10. Boys' toilet
11. Men teachers
12. Dressing room
13. Locker alcoves
14. Bookroom
15. Girls' toilet
16. Women teachers
17. Projection booth
18. Fly floor
19. Storage



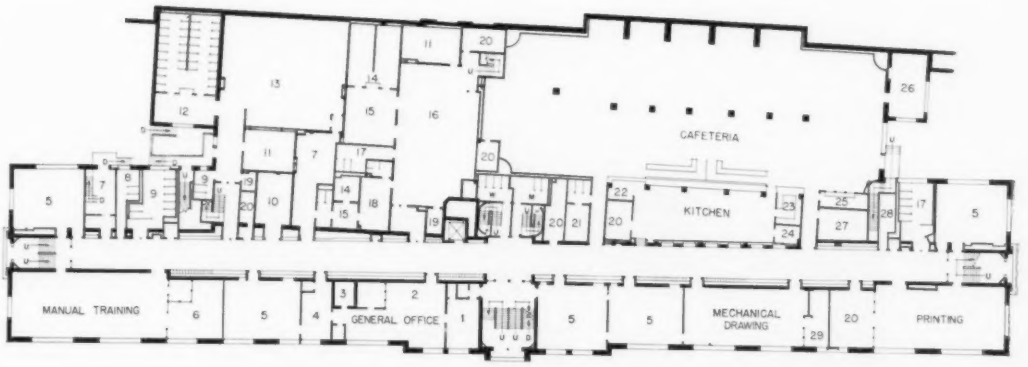
First floor

1. Health suite
2. Study
3. Library
4. Stacks
5. Classroom
6. Bookroom
7, 8. Women teachers
9. Girls' toilet
10. Girls' instructors
11. Boys' instructors
12. Men teachers
13. Boys' toilet
14. Biology laboratory
15. Preparation

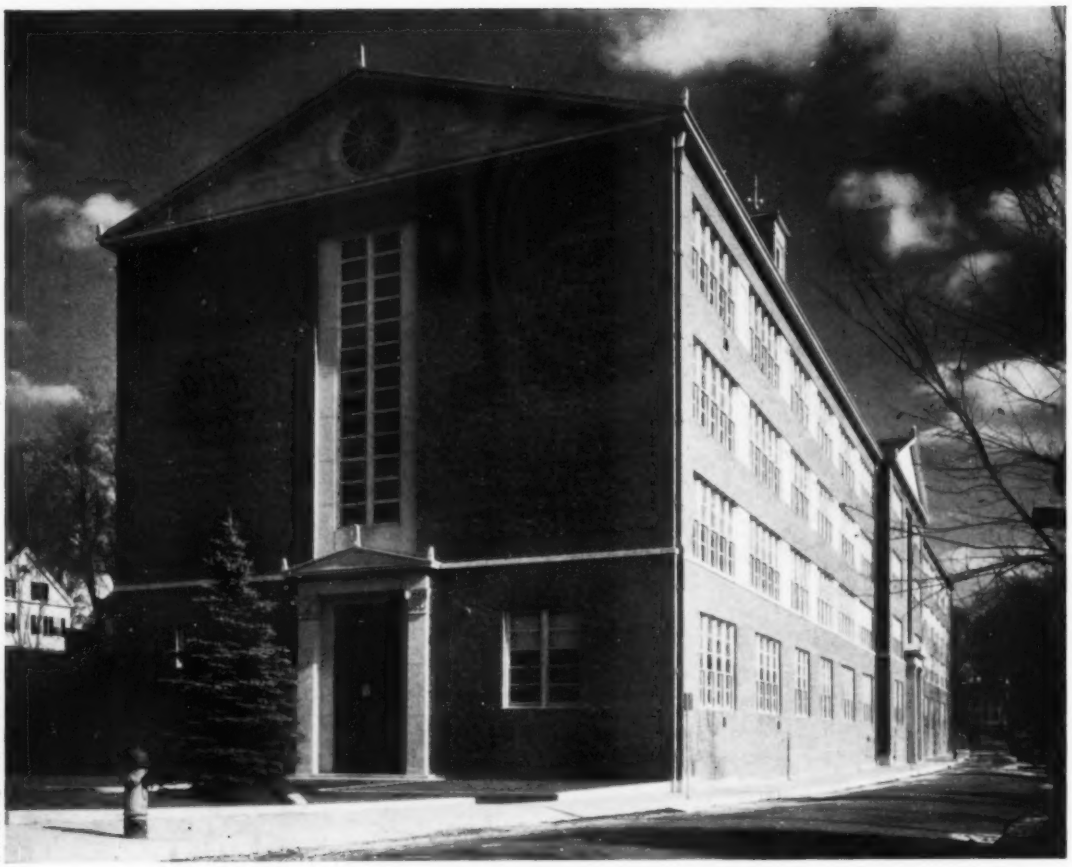


Ground floor

1. Principal
2. Waiting space
3. Vault
4. Ass't Principal
5. Classroom
6. Finishing room
7. Janitor
8. Women teachers
9. Girls' toilets
10. Lumber storage
11. Corrective room
12. Girls' showers
13. Girls' dressing
14. Boys' showers
15. Boys' drying
16. Boys' dressing
17. Boys' toilet
18. Visiting team
19. Towels
20. Storage
21. Help's lockers
22. Ice cream
23. Dishwashing
24. Office
25. Candy shop
26. Teachers' dining
27. Fan room
28. Men teachers
29. Blueprinting



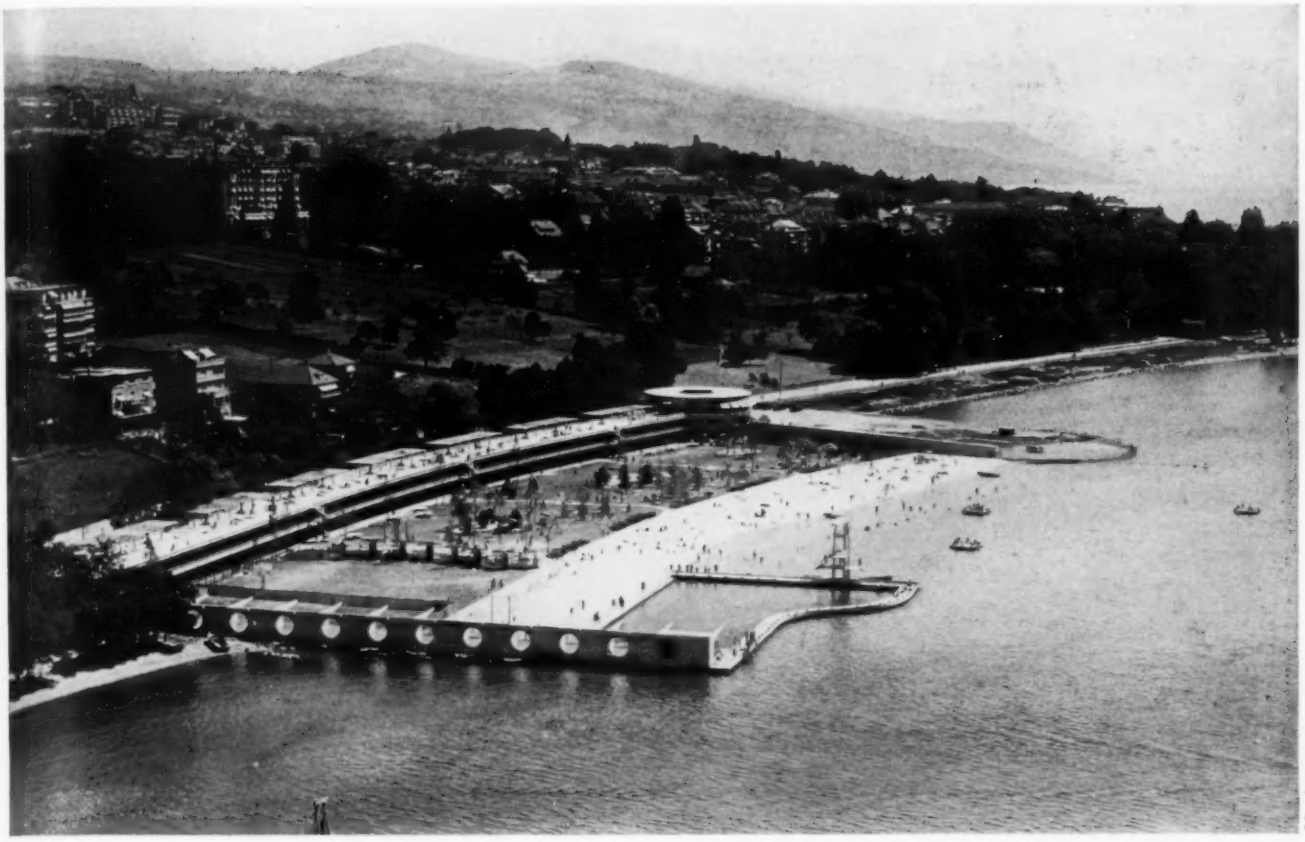
FITCHBURG HIGH SCHOOL



Photos by Paul J. Weber

East and west wings repeat the central motif on the front.

An unusually well-equipped stage serves the large auditorium. The decorative dado is of alternate veneers of birch and maple. Ceilings are acoustically treated and have recessed lighting.



Monkemeyer

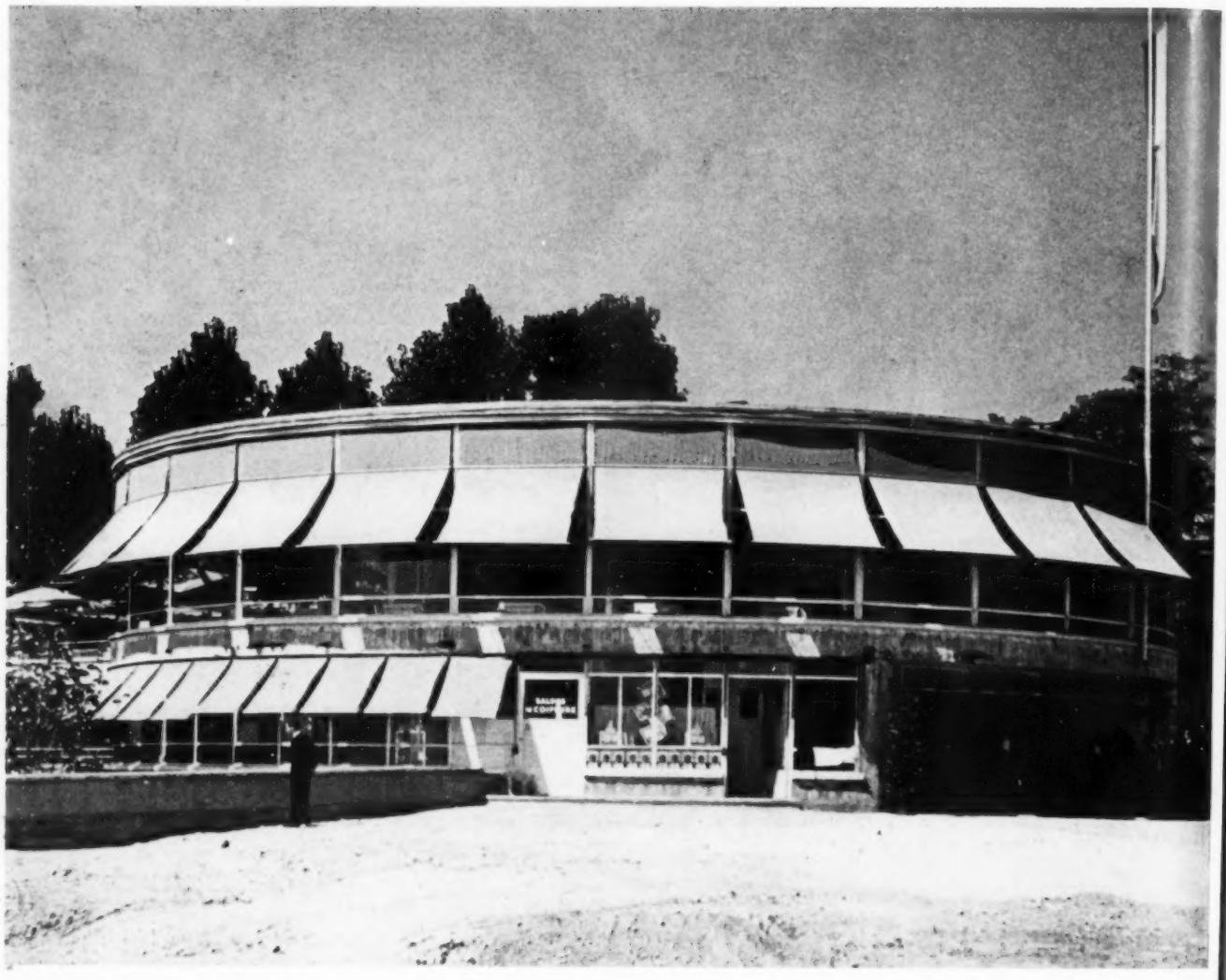
BEACH PARK IN SWITZERLAND CLAIMED FROM BOTTOM OF LAKE

MARC PICCARD
Architect

1. Swimming pool
2. Exercise field
3. Pergolas
4. Game area
5. Wading pool
6. Children's playground
7. Beach
8. Lawn
9. Solarium
10. Avenue
11. Esplanade
12. Rotunda
13. Parkway

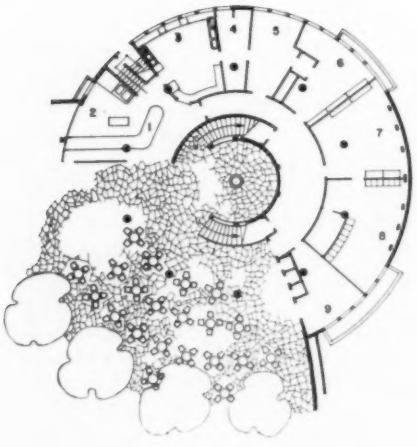
BELLERIVE is a new beach park on Lake Geneva, west of the city of Ouchy. It is one of what will eventually be a great chain of parks, playgrounds, and other public projects extending eastward from this point to the city. A network of roads, wharves, and esplanades will assure easy communication with the city.

The entire beach at Bellerive, about 200,000 sq. ft. in area, has been dredged from the bottom, and lies lakeward of the natural shore line. On the side nearest the city are quays and a parking area for automobiles. Entrance to the park is by way of a circular building in which are located a restaurant and general personal services. From this rotunda there is direct access at each floor level to a three-story bathhouse which extends parallel with the beach for about 800 ft. On the west a leaf-shaded pergola leads from bathhouse to pool. In the great central space between beach and cabins are game areas, lawns, and paved rest spots; further growth of recently planted trees will, in time, give this area a more verdant appearance.



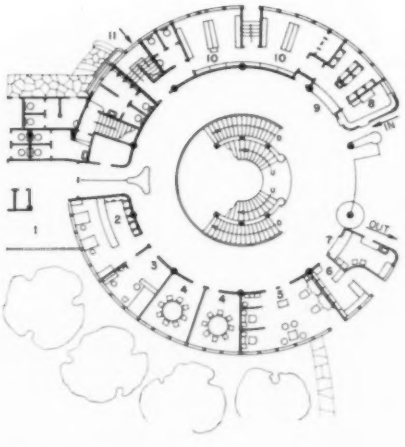
Photos by Monkemeyer

Rotunda at northeast corner of park. The ground story of the building opens on a lower grade beyond retaining wall at left. A restaurant occupies the top story and opens directly onto the bathhouse sun terrace, which extends the length of the beach. Entrance to bathhouse is on first floor; persons at right are awaiting admission.



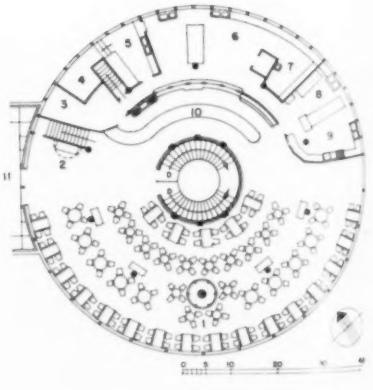
Ground floor

1. Buffet
2. Office
3. Scullery
4. Cellar
5. Beer
6. Wine cellar
7. Employees' dining room
8. Linen
9. Rentable articles



First floor

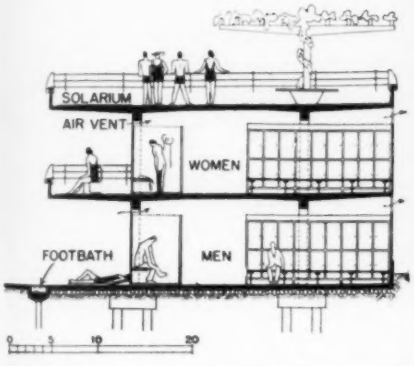
1. Balcony, women's section
2. Office
3. Bath sup't.
4. Salon
5. Hairdresser
6. Tobacco
7. Soiled linen
8. Ticket office
9. Clean linen
10. Steward
11. Service entrance



Second floor

1. Restaurant
2. Grill
3. Storeroom
4. Cooling room
5. Cold foods
6. Kitchen
7. Bakery
8. Food preparation
9. Dishwashing
10. Buffet
11. Sun terrace

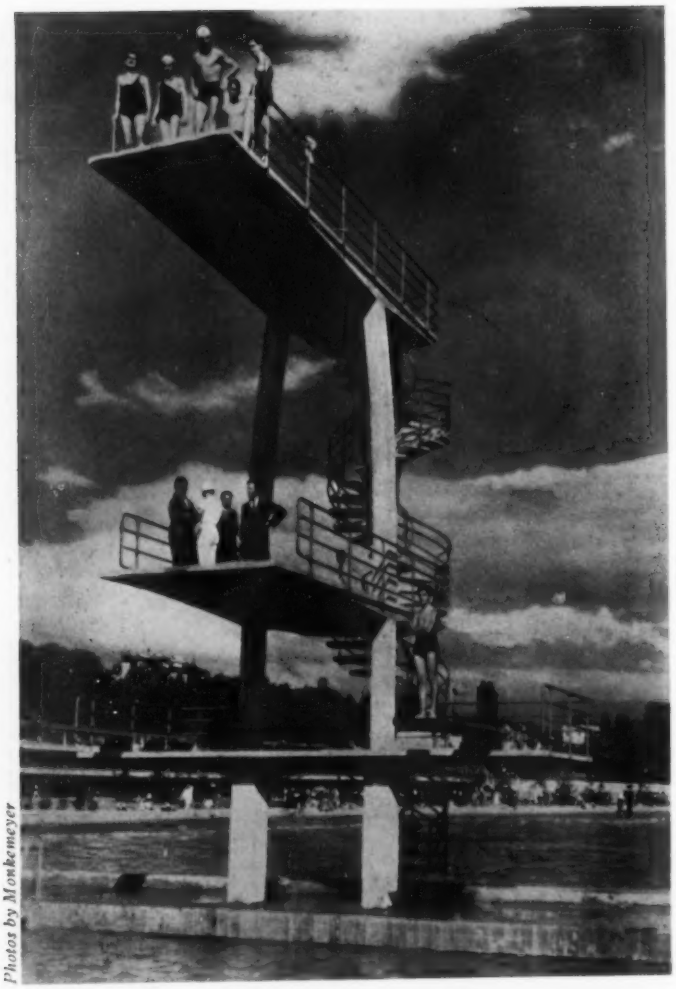
SWISS BEACH PARK



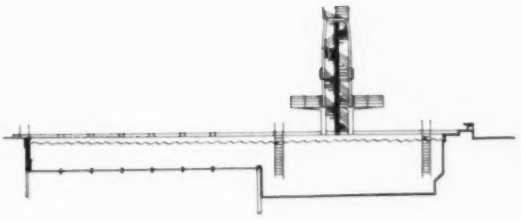
Men's cabins at ground level, women's cabins above, sun terrace on top; spiral stairways at regular intervals

One of the many paved and shaded rest areas for nonbathers

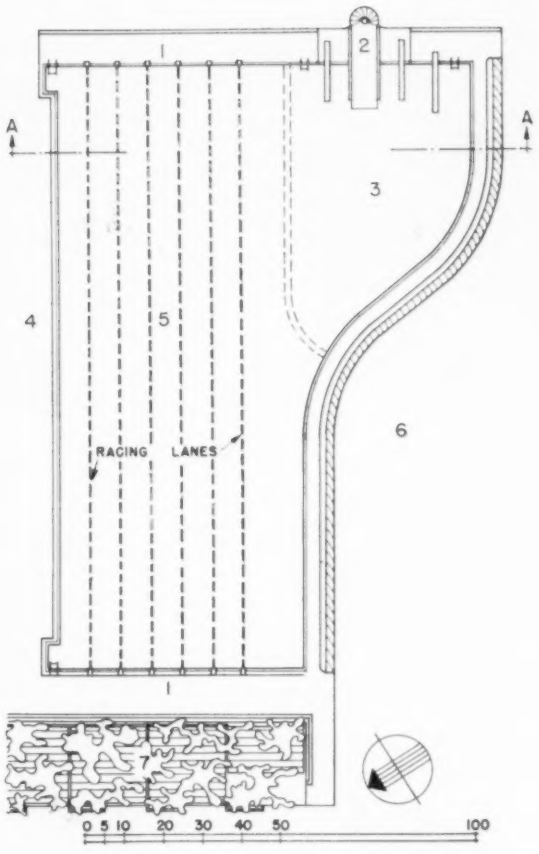
SWISS BEACH PARK



Photos by Monkemeyer



Section of pool

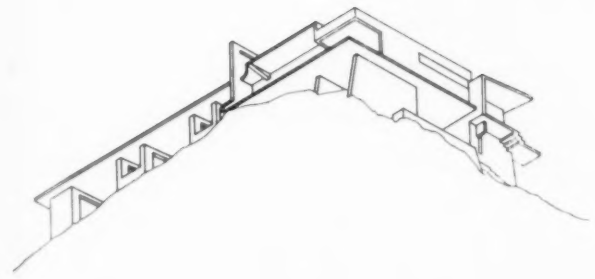


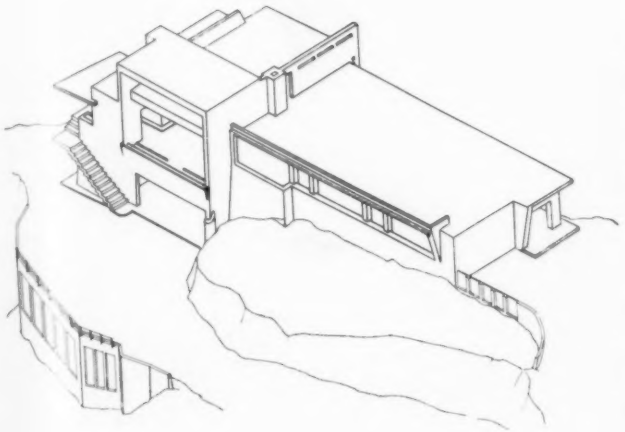
Plan of pool

1. Starting platform
2. Diving tower
3. Diving area
4. Beachside
5. Swimming section
6. Lakeside
7. Pergola

Paul Mooney

HOUSE FOR WRITER AFFORDS PRIVACY AND SPECTACULAR VIEW

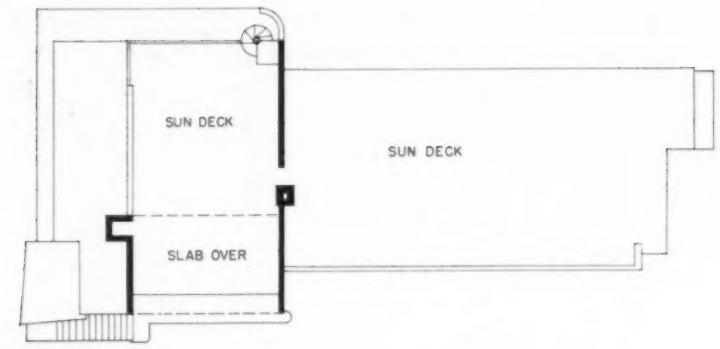




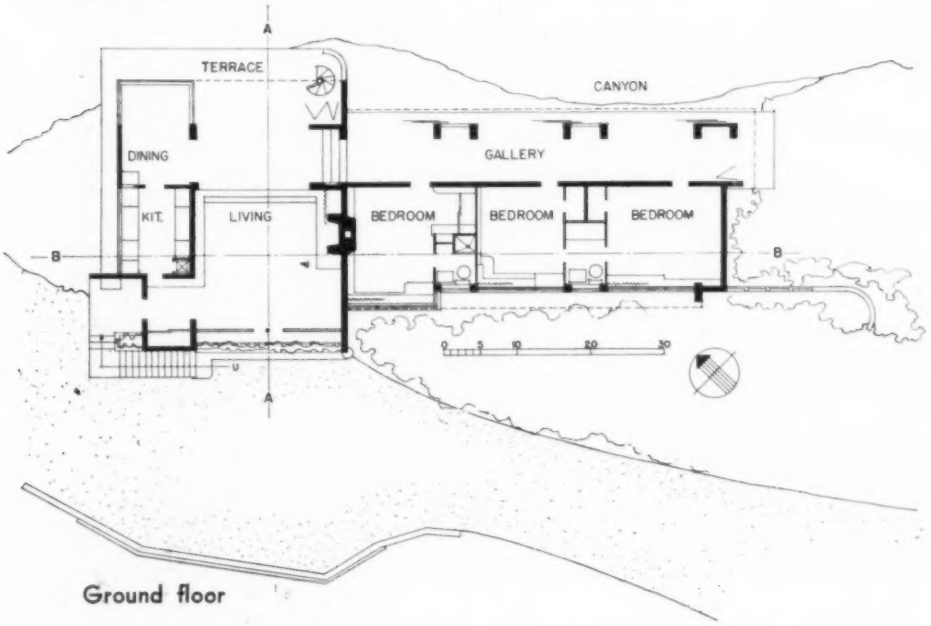
ALEXANDER LEVY
Designer

FIVE HUNDRED feet sheer above an ocean-inlet canyon at Laguna Beach, California, is the house of Richard Halliburton, writer and traveler. At the top of a steep roadway a 17-ft. retaining wall, hooked back into the bedrock, supports a level area from which the work of building was done. The site affords spectacular views in three directions—eastward through an uninhabited canyon to the mountains 80 miles away, northwest along the coast for 70 miles, and southwest across the Pacific for more than 60 miles. Every room in the house controls an ocean view and a canyon view.

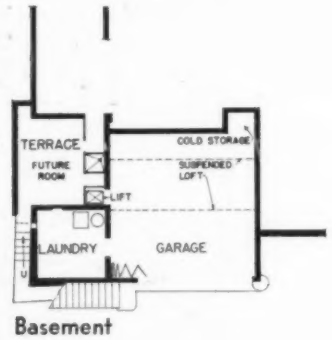
The house is in earthquake country, sparsely settled and without adequate fire protection; therefore, concrete was indicated as the construction material. The use of reinforced concrete has made possible a lightness of structure and a width of span which permits maximum exploitation of the view.



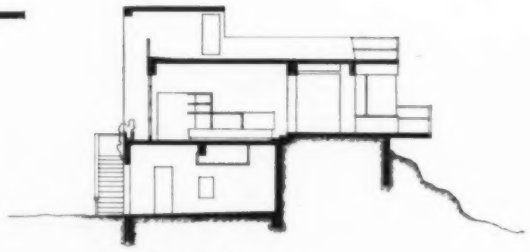
Roof plan



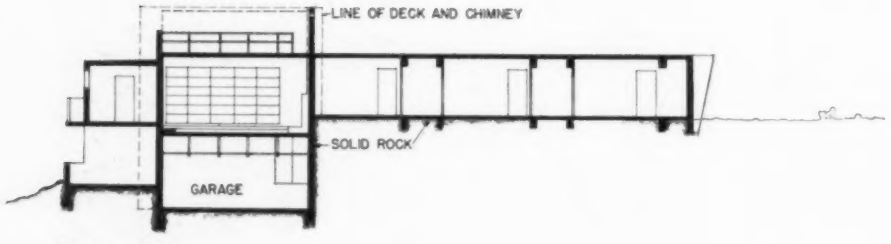
Ground floor



Basement



Section A-A

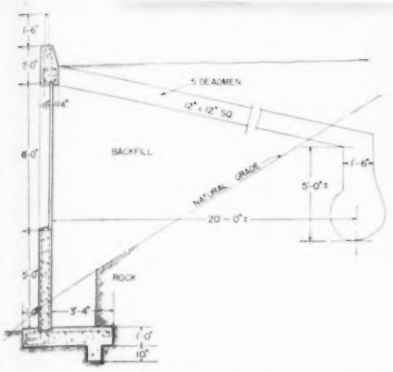


Section B-B

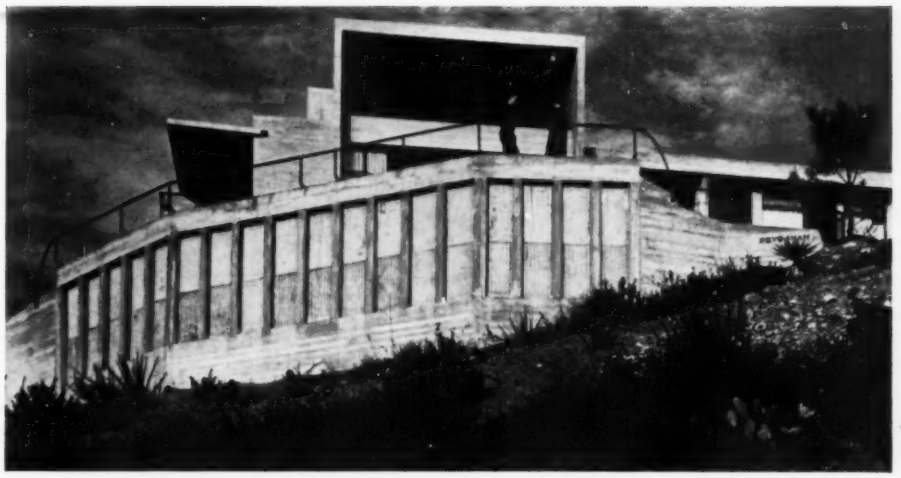
THE advantages of reinforced-concrete construction have been utilized most fully in the design of living room and dining room. The latter has a 6-ft. cantilevered bay permitting an unobstructed view in three directions. The living room has only two bearing walls. On the sunset side is a 9 x 20 ft. clear glass curtain opening onto a narrow balcony. Opposite are steel and glass accordion doors, 8 x 16 ft.; these open on a terrace cantilevered over the rim of the precipice, 500 ft. above the floor of the canyon.

An iron spiral stair rises from terrace to roof, where a roof-deck shelter provides space for outdoor living in the California sun. A dumbwaiter leads from garage to kitchen to roof, and meals may be served here without inconvenience.

All ceilings, like walls and floors are of reinforced concrete; floors are integrally colored. Walls and doors are soundproofed, insuring privacy to the two writers who live here.



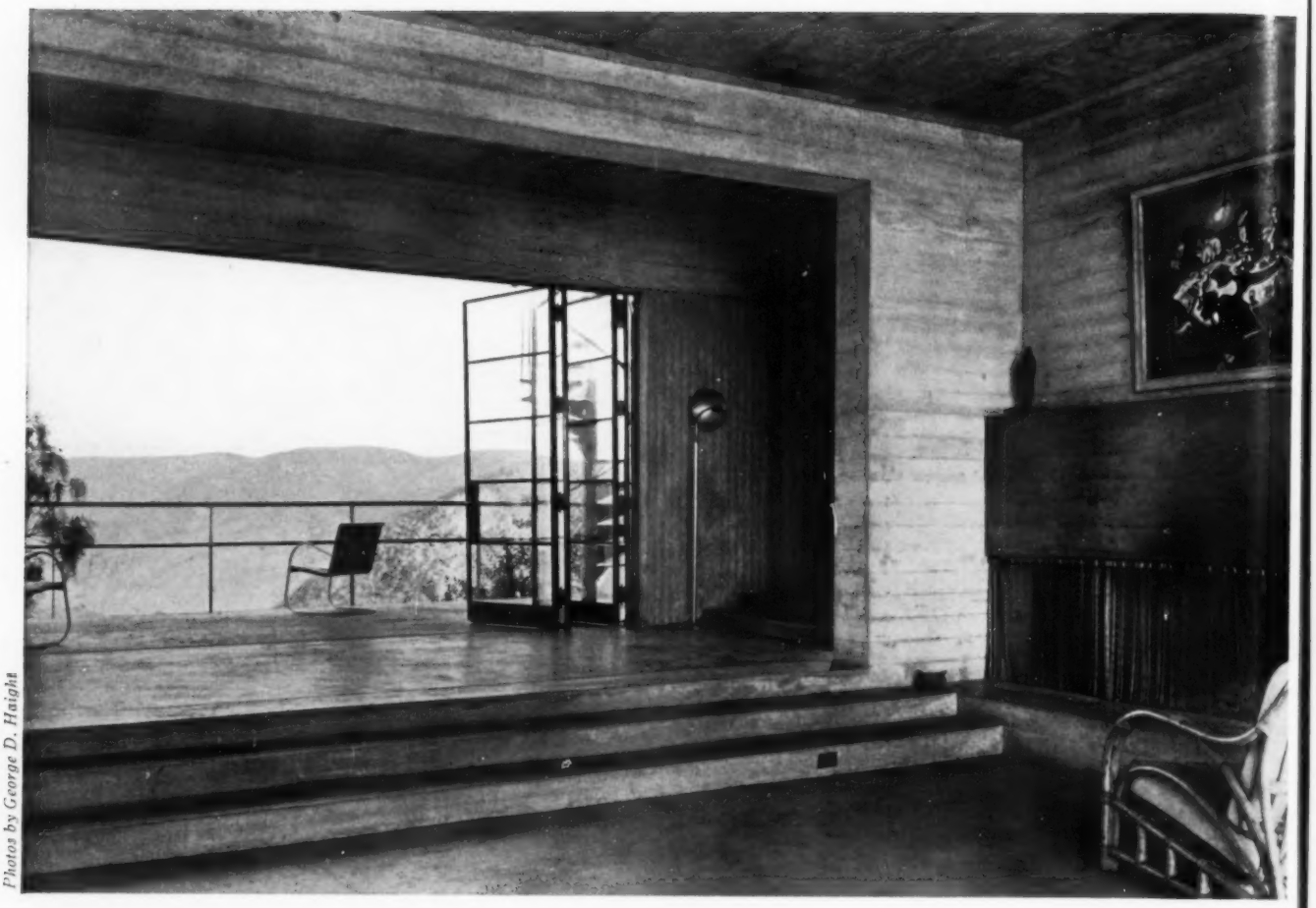
Retaining wall, hooked back into bedrock by concrete beams. Parking and turn-around space is provided above.



View from south

Photos by Carl Zeigler

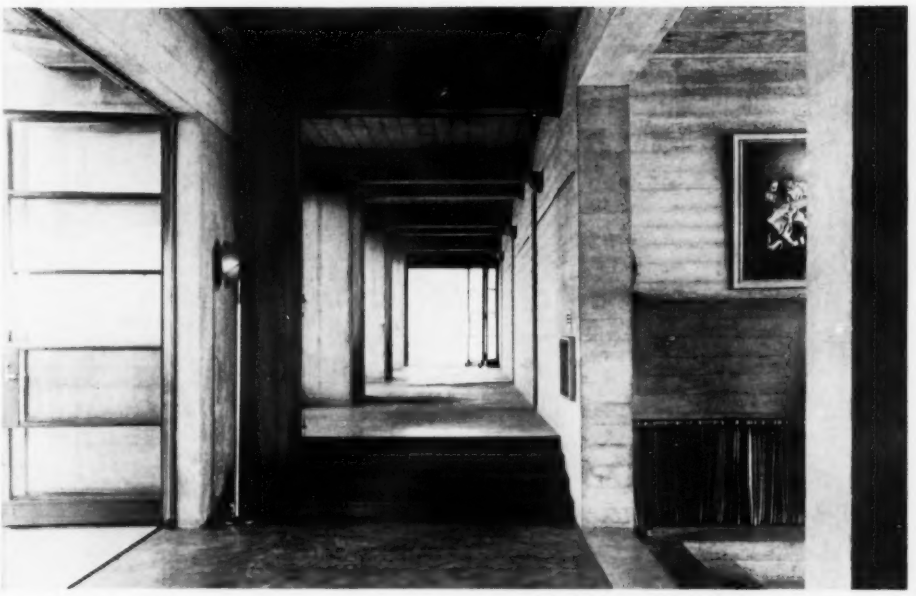
View from east



Photos by George D. Haight

ABOVE: Living room, looking west. The elevated concrete hearth merges into three concrete steps crossing the width of the room. Hearth and steps provide seating for a relatively large number of guests, without cluttering the room with too many chairs. LEFT: Dining room, seen from gallery; bay is cantilevered over canyon wall.

CALIFORNIA HOUSE



Gallery, looking southeast

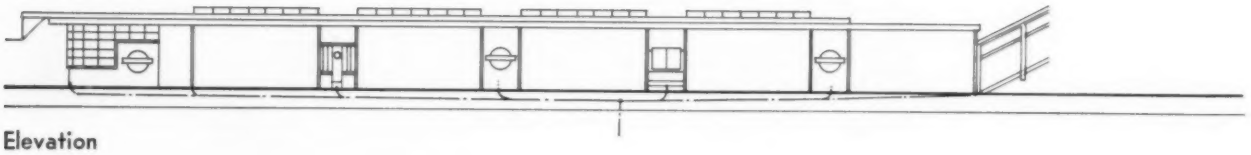
Master bedroom

Guest bedroom

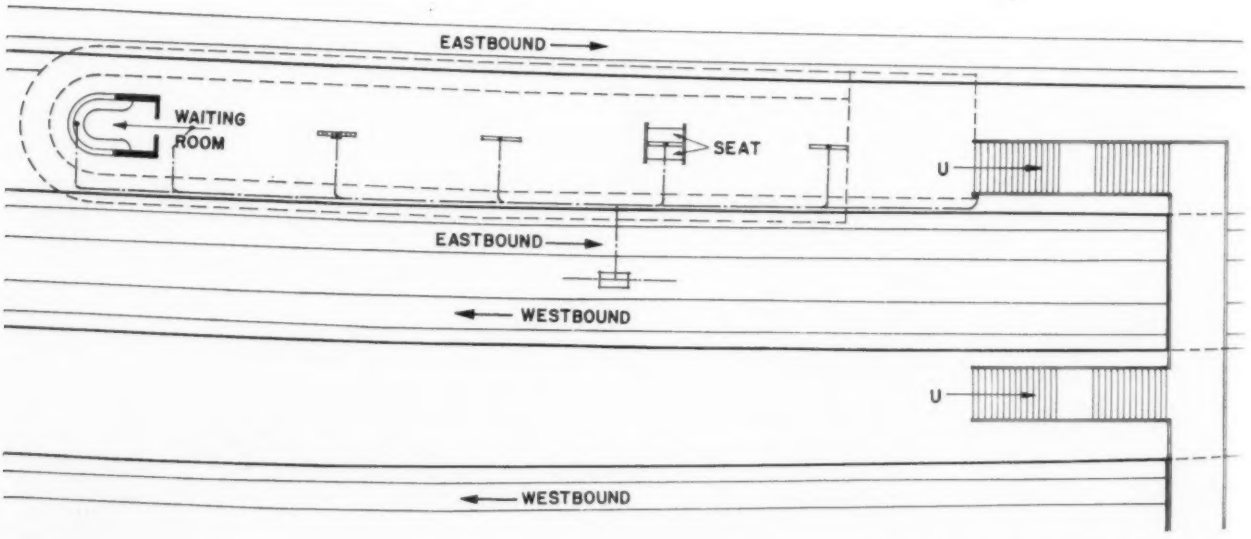
Photo by Photographia, Ltd., courtesy London Transport

Waiting room, eastbound platform

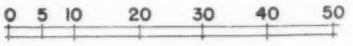
PLATFORMS



Elevation



Plan

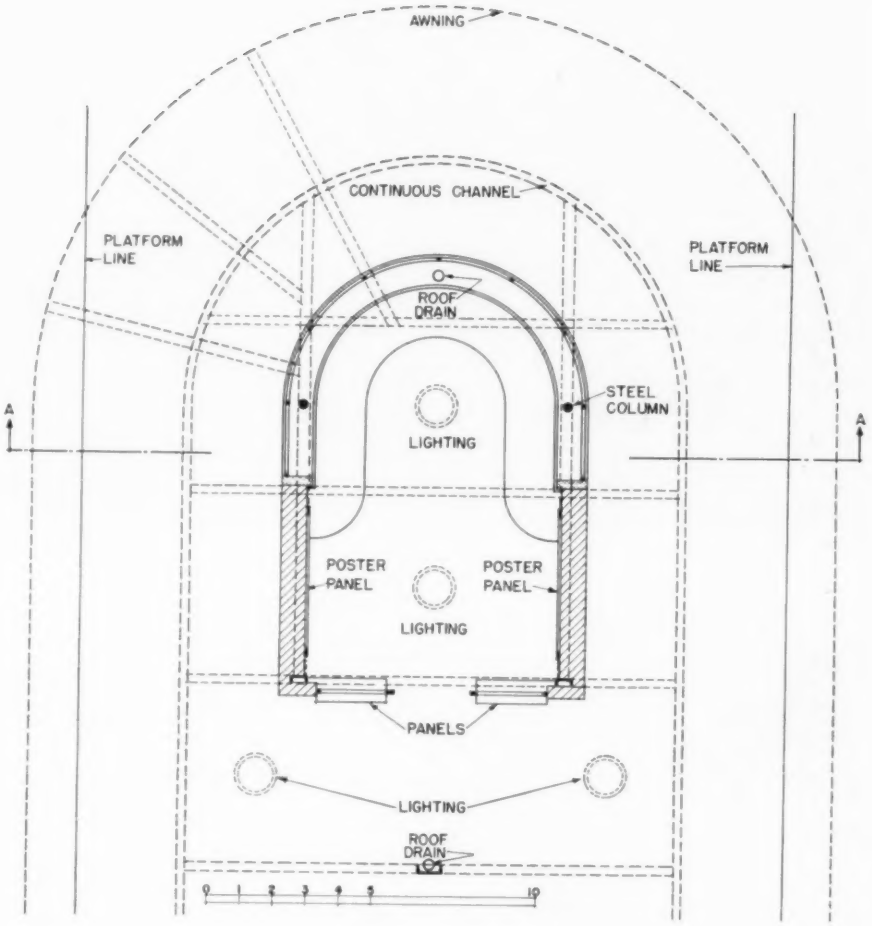


RAILROAD WAITING ROOM PERMITS EASY VISION IN ALL DIRECTIONS

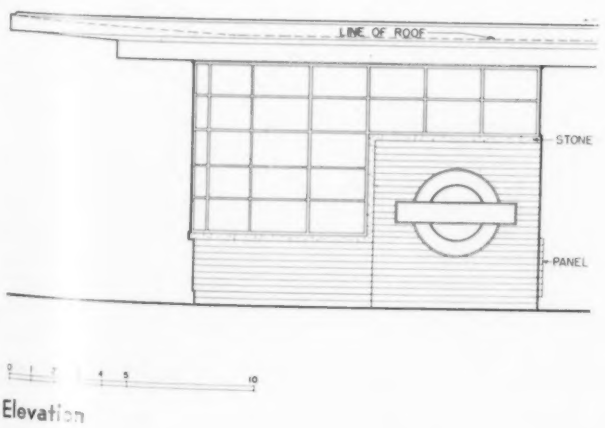
LONDON TRANSPORT
Designers

THE WAITING ROOM of the South Ealing Station in London commands an unobstructed view in all directions; east- and westbound trains on all tracks can be observed with ease.

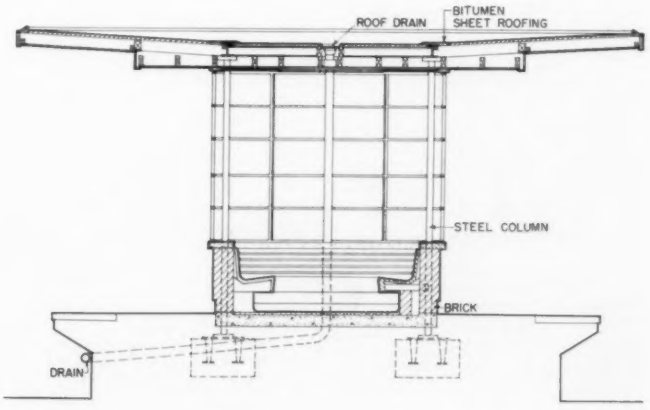
Of particular interest is the construction of the roof, which covers waiting room and platform. Timber rafters and board covered with asbestos are supported by a welded steel frame. The underside is lined with "TenTest" fiberboard and finished with flat oil paint. The roof slopes slightly downward toward the center to a series of drain pipes along the platform, which empty into an existing manhole.



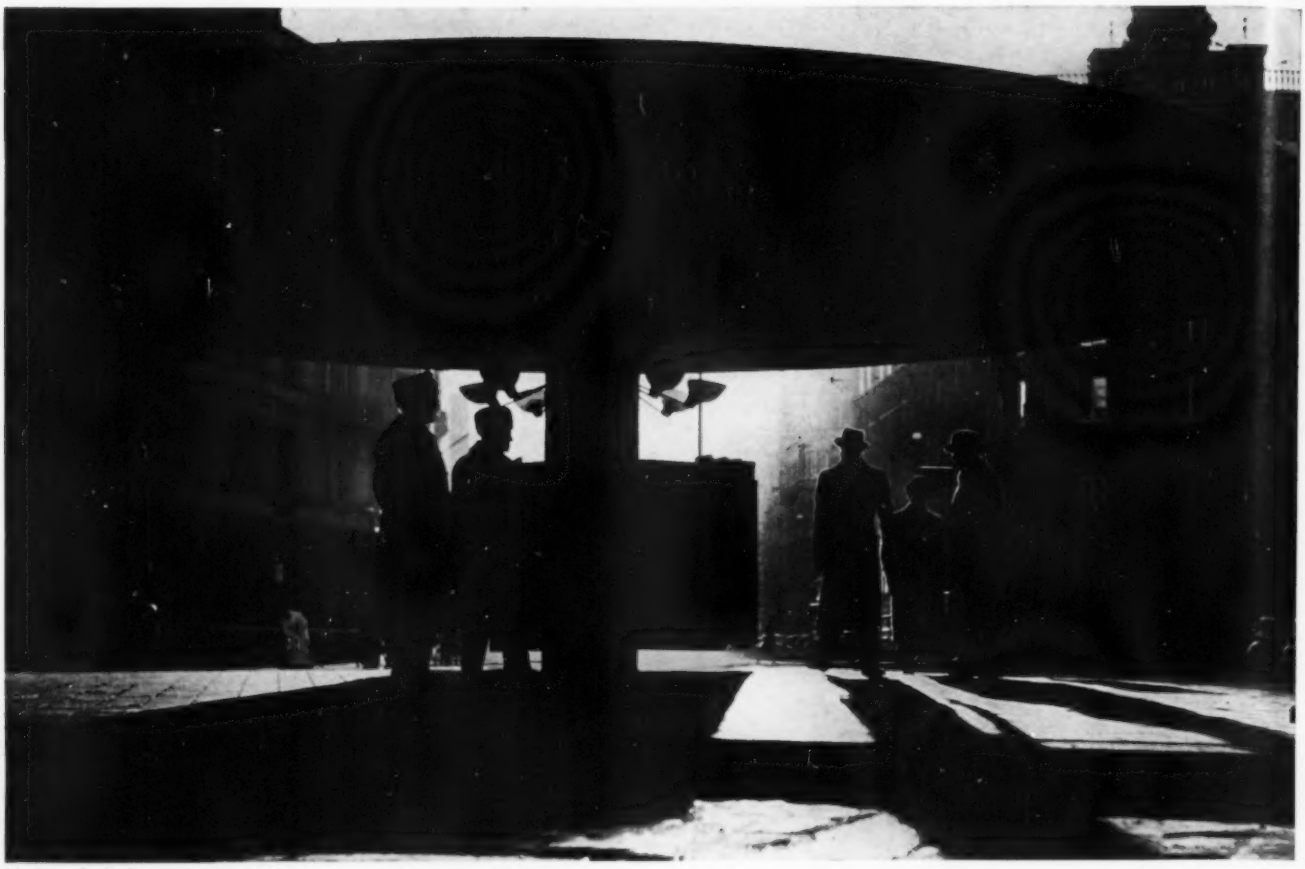
Plan



Elevation



Section



C. E. Rosenberg

View of shelter at dawn

View of shelter at evening. This is a busy street intersection; trolleycars pass on three sides. In inclement weather, waiting commuters are shielded from snow and rain.

RAIN SHELTER OFFERS MINIMUM OBSTRUCTION TO TRAFFIC

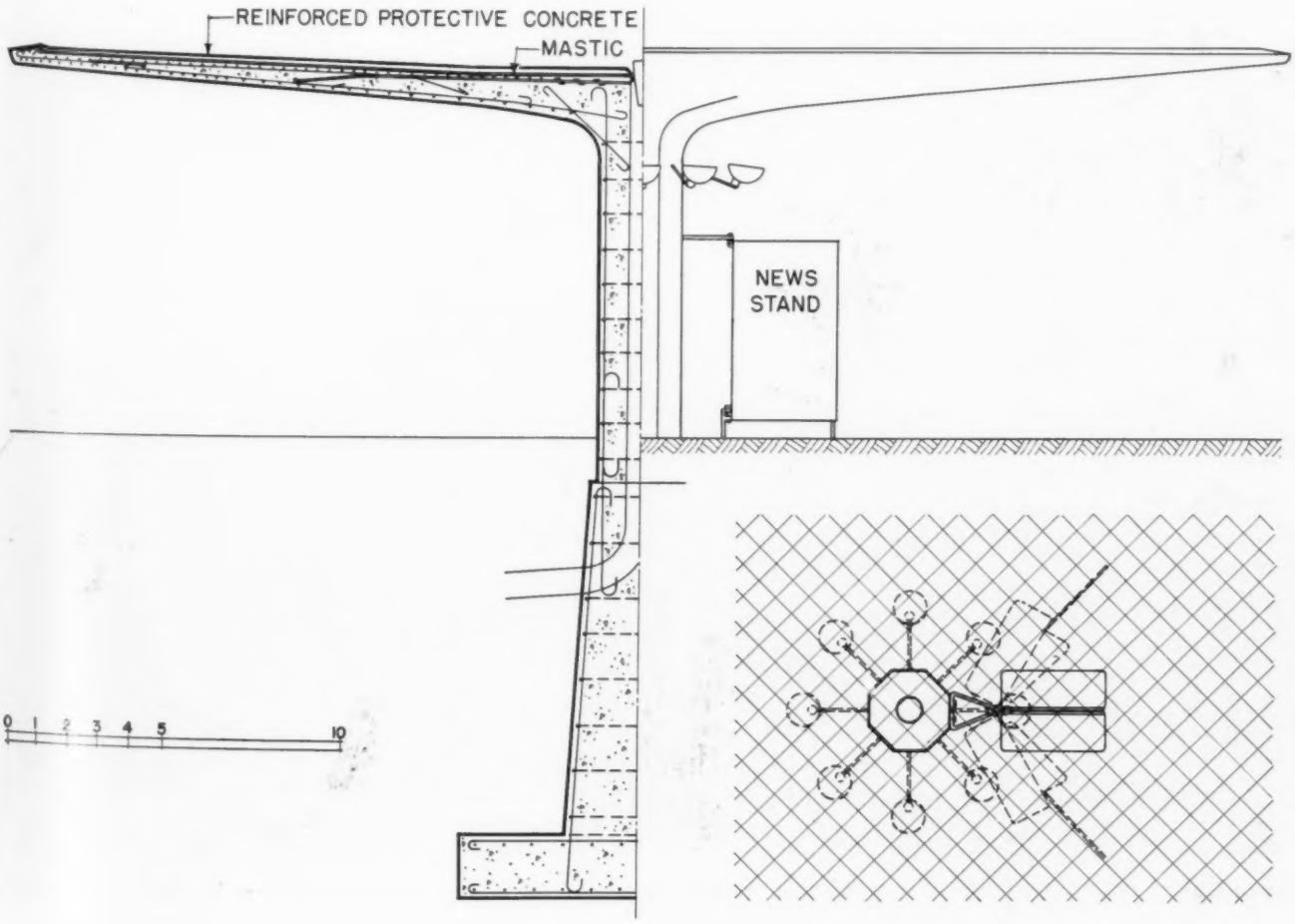
HOLGER BLOM
Architect

E. WRETBLAD
Engineer

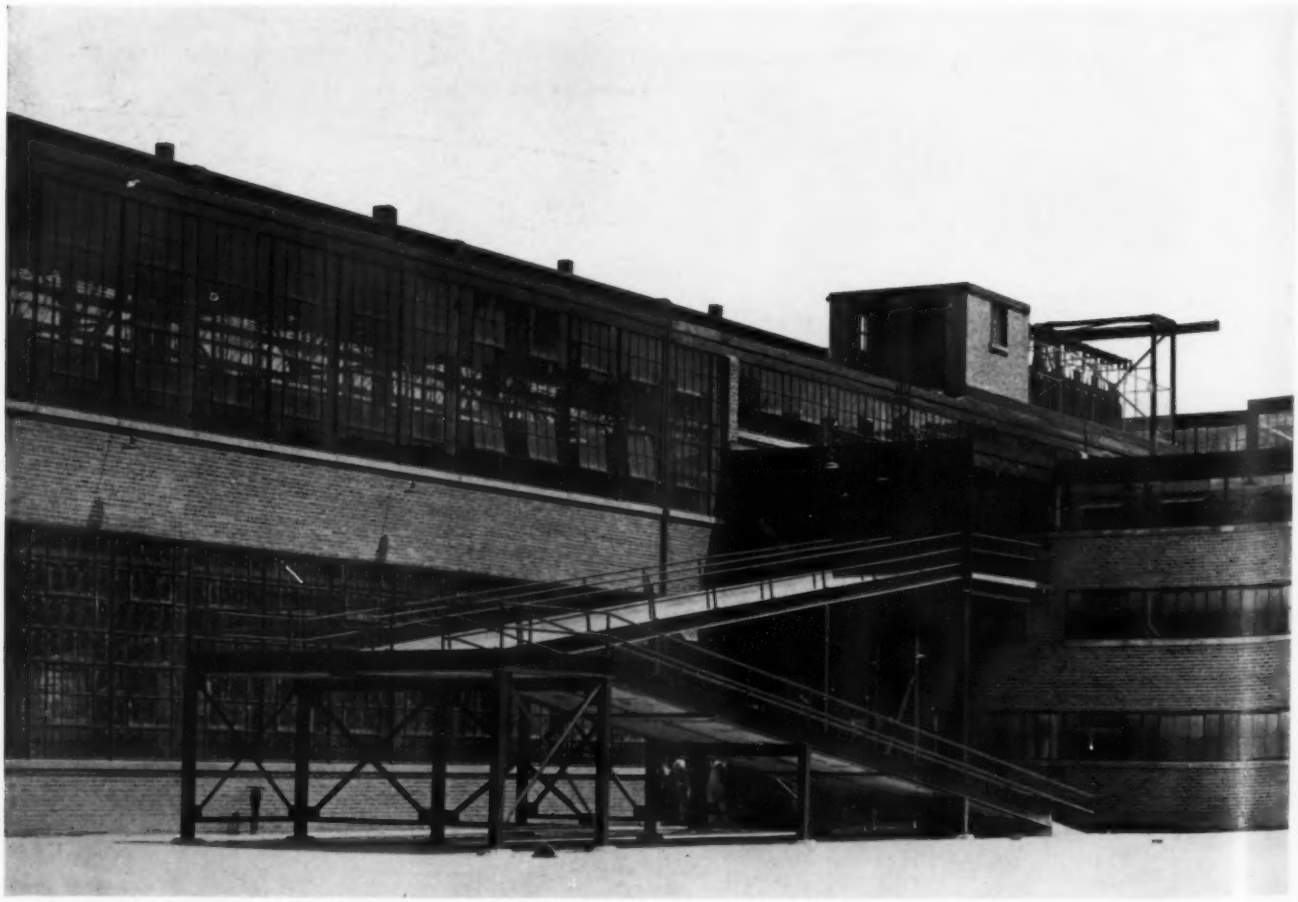
A RAIN SHELTER constructed by the City of Stockholm, Sweden, performs its function with minimum obstruction to pedestrian traffic. In form like an inverted umbrella, it slopes downard slightly toward the center where an outlet carries off the water. Below grade the octagonal pillar passes through a bed of clay, its base-plate resting on a substratum of fine sand more than 11 ft. underground.

The material, cast in a form of hardened masonite, is reinforced concrete throughout. Reinforcing of the roof slab is arranged as a network radiating from the center. High tensions in the upper part of the slab are taken by flat iron radii welded to a series of flat iron rings. The rest of the reinforcing consists of round bars, which are also joined by welding. Roof insulation consists of mastic with a protective layer of reinforced concrete above it. A sheet-copper drip runs around the edge of the roof. Visible concrete surfaces have been covered with two coats of a light grayish-green mineral paint. (See AR, 4/38, pp. 46-49.)

Close to the octagonal pillar is a newsstand operated by a vendor who has had his station here for almost a half-century. The stand is of welded sheet-iron and may be shut at the close of business.



Towers for personnel facilities—lavatories, lunchrooms, etc.—are shown. Each tower accommodates 250 workers.



Ramp: Center railings are removable; gradient is suitable for electric trucks; space underneath may be used for storage.

PRODUCTION INCREASED BY SEGREGATION OF AUXILIARY AREAS

BRIGGS MANUFACTURING COMPANY

Designers

C. R. WYLIE

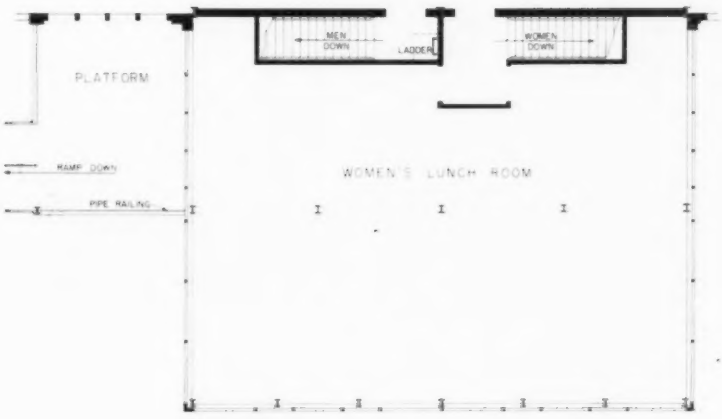
Superintendent of Construction

THE PLANT of the Briggs Manufacturing Company in Detroit, Michigan, is interesting for its separation of auxiliary facilities—lunchrooms, lavatories, elevators, stairways, etc.—from working spaces. Previous experience had demonstrated that continuity of production areas brought increased efficiency.

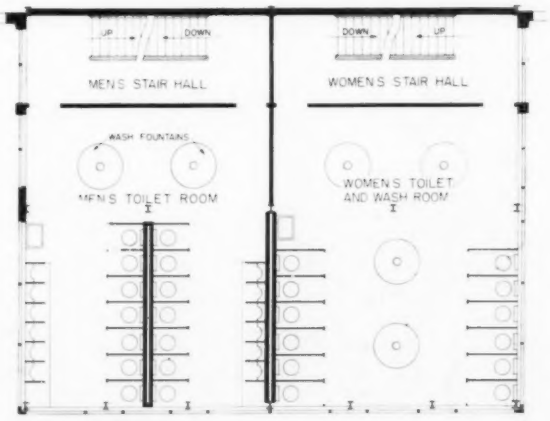
Employee facilities are contained in towers, three stories in height, adjacent to the plant itself; each tower can accommodate 250 workers at one time. Elevators have been eliminated: ramps are used instead: these have been designed with removable center railings and with gradient that will permit using electric trucks to carry to the second floor those materials which cannot be handled by conveyor lines.

Snow or ice formations on ramps are not expected to cause trouble; the same areas must usually be cleared anyway. If necessary, steam can be used to clear ramp surfaces—there is a steam outlet under each ramp.

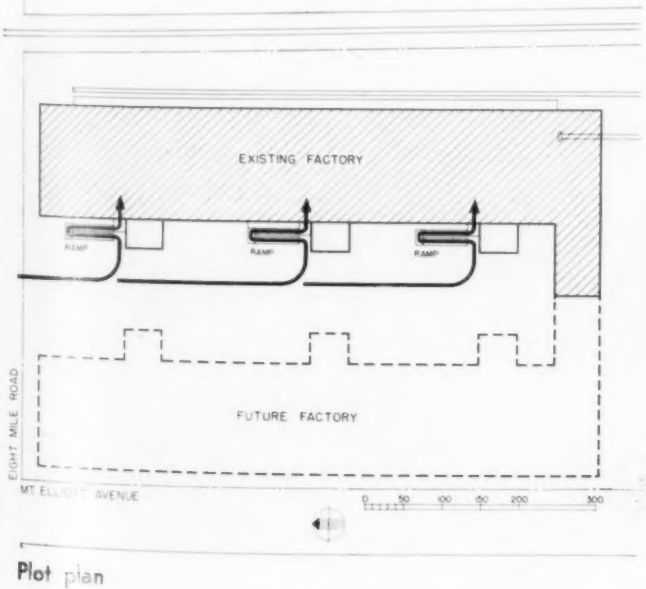
Space under ramps can be used for storage tanks or for other objects which cannot conveniently be kept inside the building.



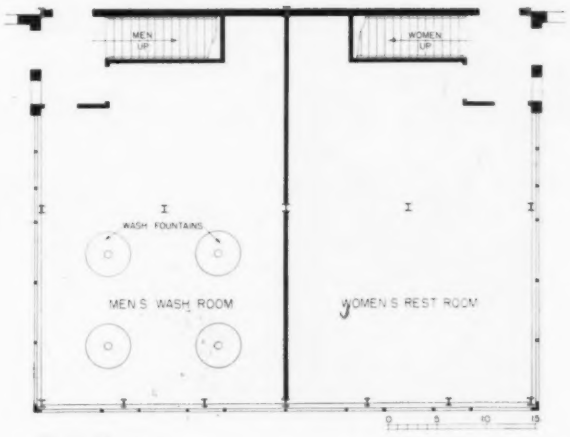
Third floor



Second floor



Plot plan



First floor

Photos by D. E. Ahlers

Talbott Realty Building. Structure is a combination of reinforced concrete and steel framing. Exterior is limestone.

Talbott Realty Building. There is a parking area at the rear of the building.

DESIGN FOR AIR CONDITIONING PLUS ACCESS TO OUTSIDE AIR

J. DOUGLAS LORENZ, AIA

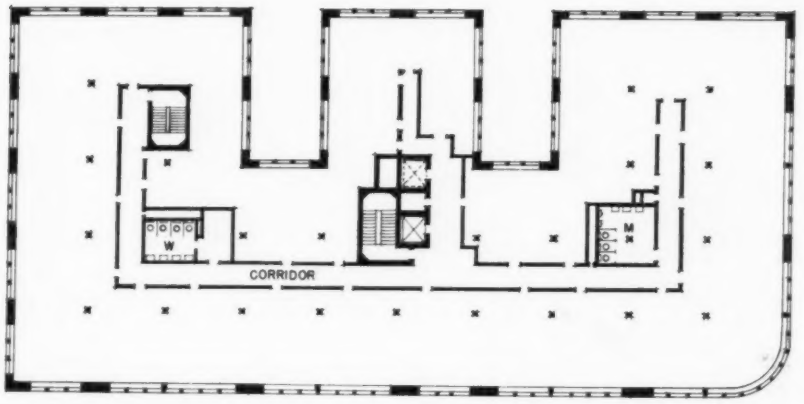
Architect

THE DESIGN of the Talbott Realty Building in Dayton, Ohio, has been influenced strongly by air-conditioning requirements. Exterior walls include large panels of glass block and metal sash: glass block for maximum light with insulating value, metal sash for vision and access to outside air—still psychologically necessary to many tenants.

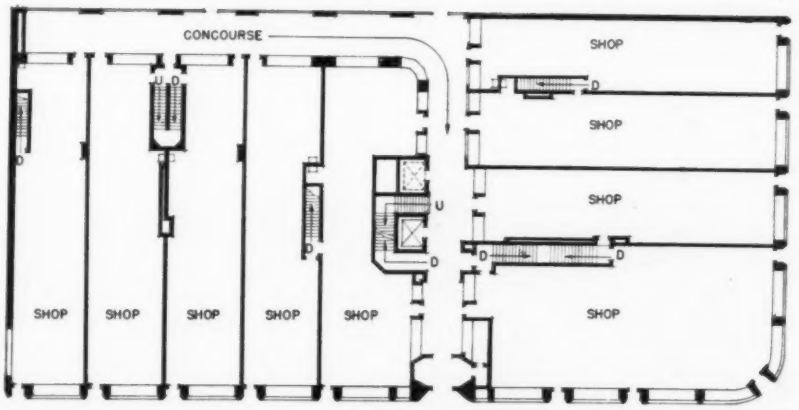
For winter conditioning, steam coils serviced from mains in the street transfer heat to blower and duct systems through which air is filtered, tempered, and distributed. In summer, air is cooled by well water pumped through coils and delivered by the same blower and duct systems. The well water is finally ejected upon the roof, covering its entire area three inches deep and providing additional cooling for top-floor offices.

On the west wall of the building, glass block is again used generously on the ground floor, admitting daylight into the corridor and into the rear windows of retail shops.

The basement includes two large shop areas, one of which is fully equipped and furnished for cafe or night-club purposes.

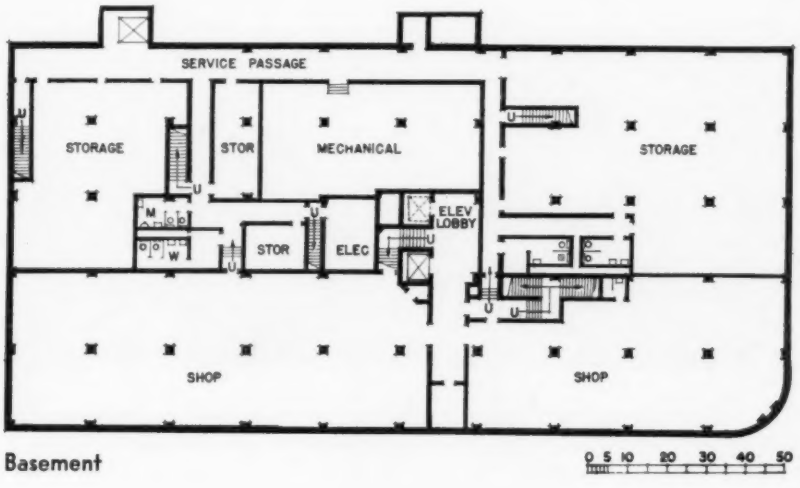


Second and third floors



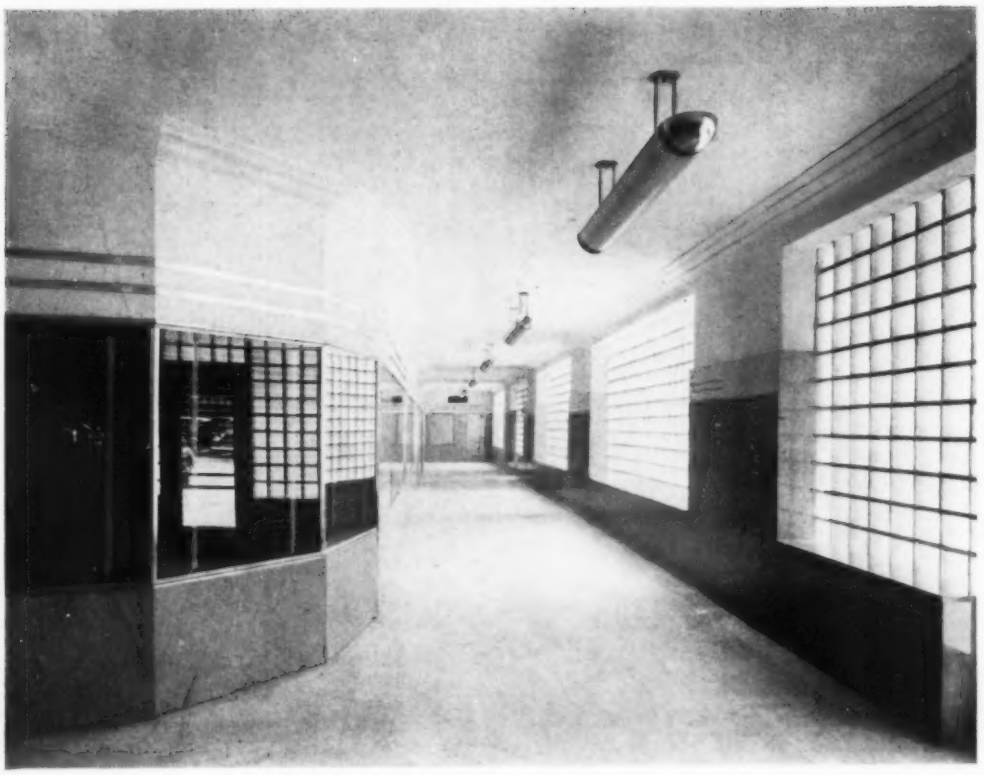
First floor

Rear of building facing parking area



Basement

TALBOTT REALTY BUILDING



Photos by P. E. Ahlers

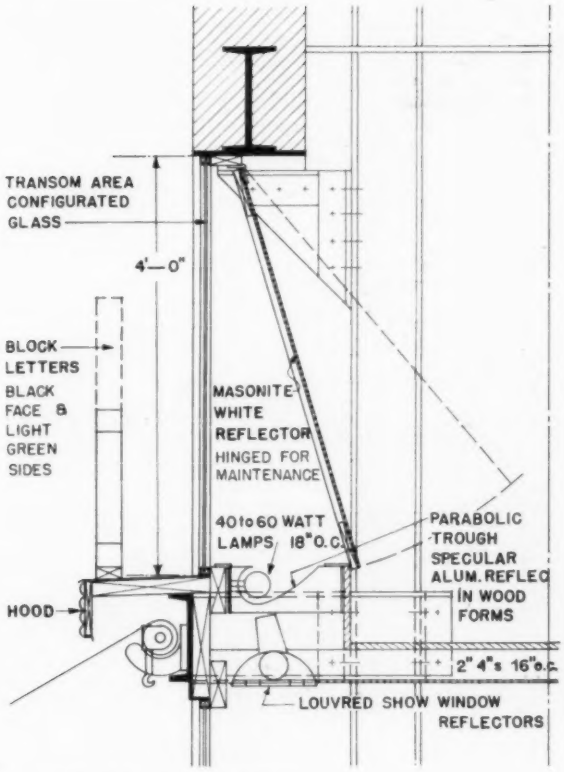
TOP: Retail shops have interior frontage on a spacious corridor leading both to street and to parking area. Use of glass block in wall reduces lighting costs. BOTTOM: Typical office. Each glass panel is about two-thirds glass block and one-third metal sash.

Transom Lighting Brings Increased Business to Cleveland Stores

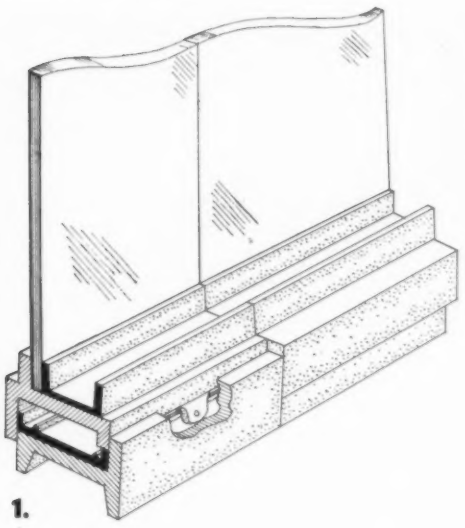
C. T. MASTERSON
Architect

W. M. POTTER
Illuminating Engineer

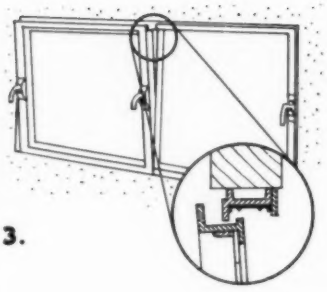
TRANSOM LIGHTING of two newly remodeled storefronts in the Cleveland area is credited with having brought quick rentals and increased sales. As a part of the work of modernization, "hung-on" electric neon signs have been removed and continuous transom lighting has been substituted. This system of illumination is said to give greater legibility and to avoid glare and blur.


TRANSOM AREA CONFIGURATED GLASS
4'—0"
BLOCK LETTERS BLACK FACE & LIGHT GREEN SIDES
MASONITE WHITE REFLECTOR HINGED FOR MAINTENANCE
40 to 60 WATT LAMPS 18" O.C.
PARABOLIC TROUGH SPECULAR ALUM. REFLEC IN WOOD FORMS
HOOD
2" 4"s 16" o.c.
LOUVRED SHOW WINDOW REFLECTORS

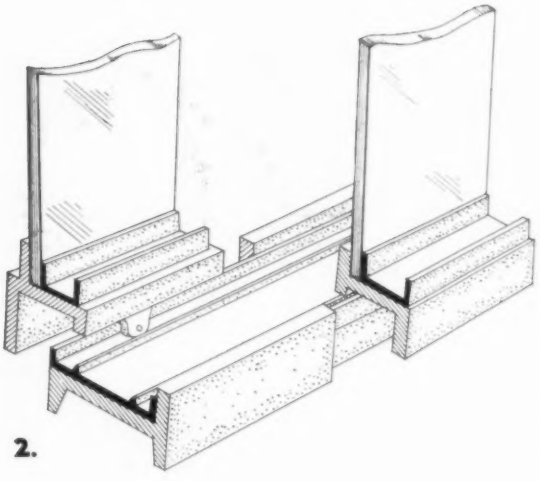
Detail of transom lighting



1.



3.



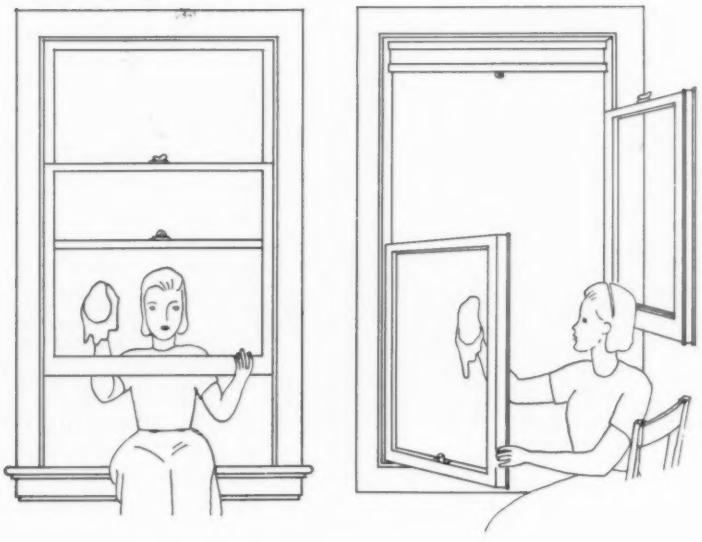
2.

1. Both sashes are flush and slide in the same groove. 2. Sashes are in different grooves and will slide one behind the other. 3. The sash can be titled forward at top, admitting air but not rain.

Metal horizontal-sliding window-frame introduced

RECENTLY INTRODUCED in Belgium is a metal window frame which slides horizontally, and which can also be tilted forward at the top admitting air but not rain. To open, one sash is pushed out, the other is pulled in; each is then in a different plane and can slide one behind the other. When closed, both sashes are in the same plane and the window is said to be absolutely weathertight. Hinges and weights are unnecessary, as the operating mechanism is contained in the sash. Among the advantages claimed for this window are the following: that it can be cleaned more easily than vertically sliding sash; that it can be opened without the removal of articles inside; that it can be demounted without tools to admit furniture or other large equipment; that it will not move and clatter in a strong wind.

American patents have been applied for, but no distribution licenses have yet been granted here. Licensing agreements have been made with some foreign manufacturers, including Canadian and British firms. The firm of John Thompson Beacon Windows Ltd., Beacon-Works, Wolverhampton, England, holds the British license.



Window combines casement and double-hung sash

THE SUPREME WINDOW, manufactured by the Supreme Window Sales Corporation, 45 W. 57 St., New York, N. Y., acts both as double-hung sash and as casement. Normally, it operates as a double-hung window; but when the lower sash is raised to within a few inches of the top and the upper sash is completely lowered, the two sections can be swung into the room and moved up and down to any position desired. When swung in, cleaning, reglazing, and painting are made safer and easier. The window comes in 18 stock sizes and in special sizes, in wood and in metals, assembled or knocked down.

DESIGN TRENDS

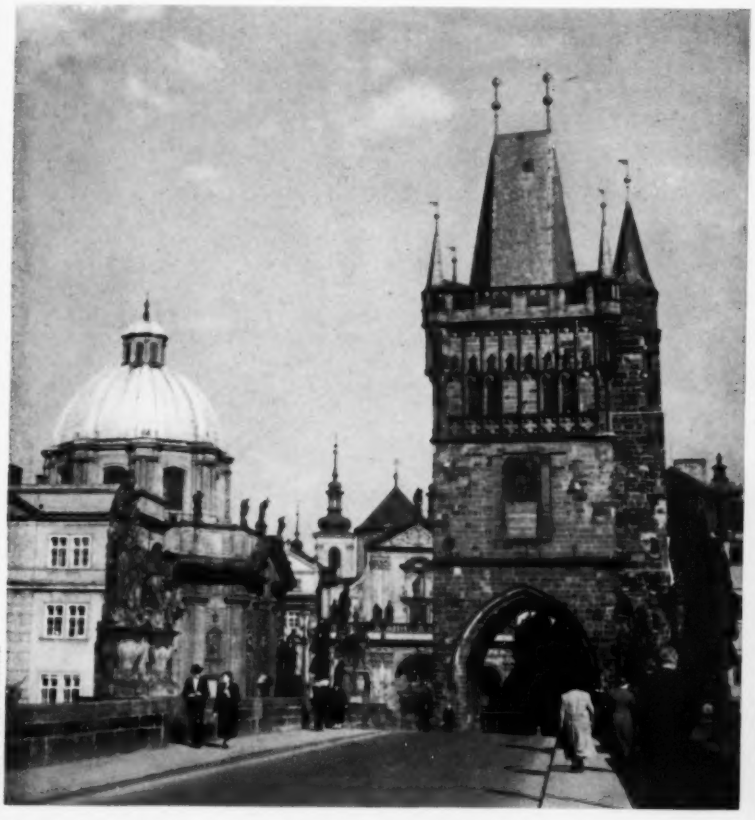


Photo Ferd. Bucina

PRAGUE—An ancient background for modernism

ARCHITECTURAL
RECORD
COMBINED WITH
AMERICAN ARCHITECT AND ARCHITECTURE

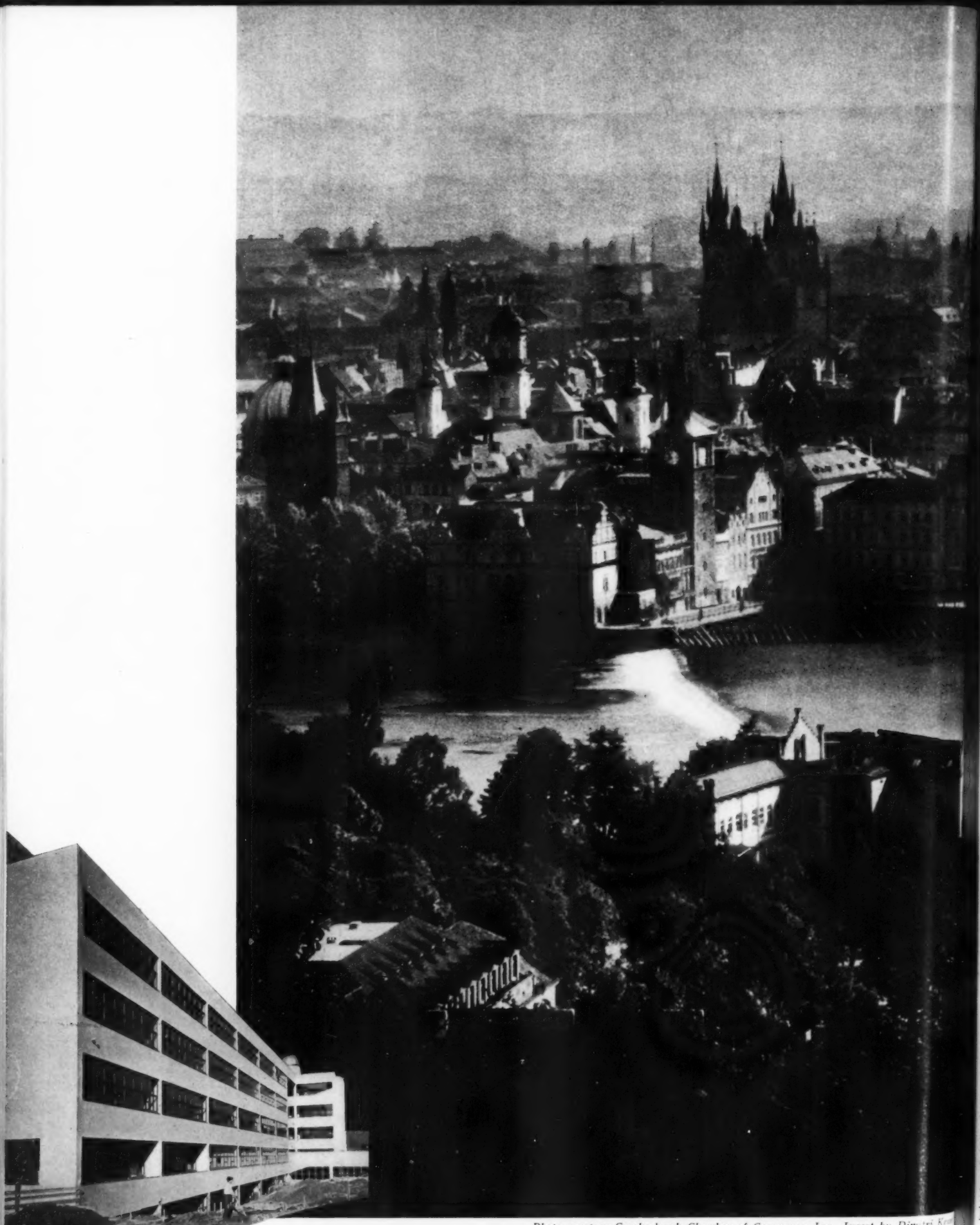


Photo courtesy Czechoslovak Chamber of Commerce, Inc., Insert by Dimitri Ko

PRAGUE . . .

A thousand years ago this "town of a hundred towers" became the capital of an independent Czech state. Today, as the metropolis of the Czechoslovakian Republic it ranks eighth in area, eleventh in population, among European capitals.

THE HISTORY OF PRAGUE is the history of the ancient Kingdom of Bohemia and, in a certain sense, the history of Central Europe. Ever since the Premyslide princes fortified a rocky eminence on the lower reaches of the Vltava River, Prague has been important as a factor in the economic, political, and architectural development of Central Europe.

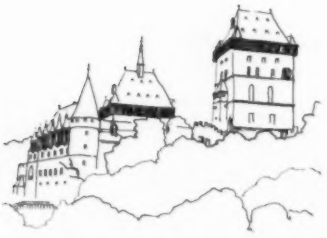
Under Charles IV (1346-1378) of the house of Luxembourg, Prague became the largest city of Central Europe and the cultural center of the Holy Roman Empire. For over a century Prague developed as a city of Gothic architecture; but late in the 15th century the city's character changed under the influence of the Italian Renaissance. In 1620 a rebellion against the ruling House of Hapsbourg was followed by a Catholic Restoration that converted Prague into a Baroque capital —a period that ended about the close of the 18th century. Prague became Germanized as a provincial town of the Austro-Hungarian Empire until the Czech element reasserted itself in 1861.

Modern Prague dates from 1918 when it became the capital of the Czechoslovakian Republic. The city expanded; and the rapid construction of new buildings, streets, and parks added entirely new quarters to the old city. New bridges were thrown across the Vltava and some of the streets and old structures changed. But largely the character of the ancient town was preserved; and the development of modern Prague is most evident in outlying districts.

Throughout this development the Czechs have sought the newest. Post-war architecture changed from "cubism" to "the plastic-decorative style" into what is now generally called "modern." Spurred by the post-war pioneer architects of Holland, Russia, France, and Germany, Czech architects rapidly mastered a technique of their own. The following pages report recent solutions to a variety of design problems. The buildings suggest the trend of Prague's future development. They also provide a commentary on the influence that availability of new materials, equipment, and services—here as well as in Central Europe—is having on solutions to current problems of building design.

Sketch by Jan Reiner

HOUSE . . .



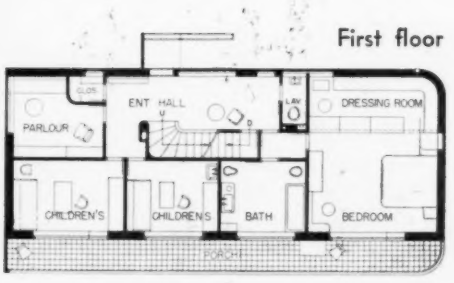
On wooded slopes of suburban Prague modern houses provide a startling contrast to the fortified castles of the ancient Czech nobility. This one, designed by Ladislav Zak, architect, is part of a small country estate that includes a garage and a greenhouse. The terraced elevation faces south giving the second-floor living rooms the greatest amount of sunshine and a clear view of the entire estate.

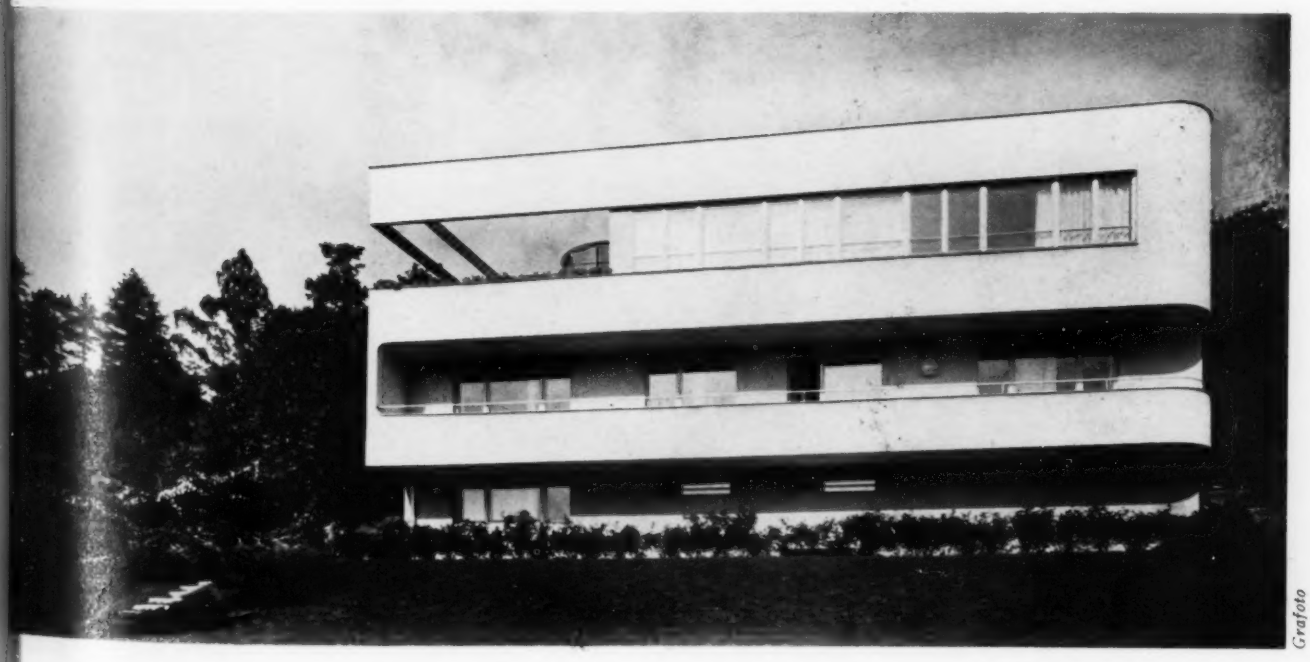
Dimitri Kessel

Construction is a combination of reinforced concrete and brick bearing walls, insulated with sheets of treated wood shavings. Windows are double-glazed; doors, plywood in steel frames. A partition of plate glass slides out from the wall to separate living room and study spaces when desired. The house is heated with a warm water plant; domestic hot water is supplied from an electric unit.

Second floor

First floor

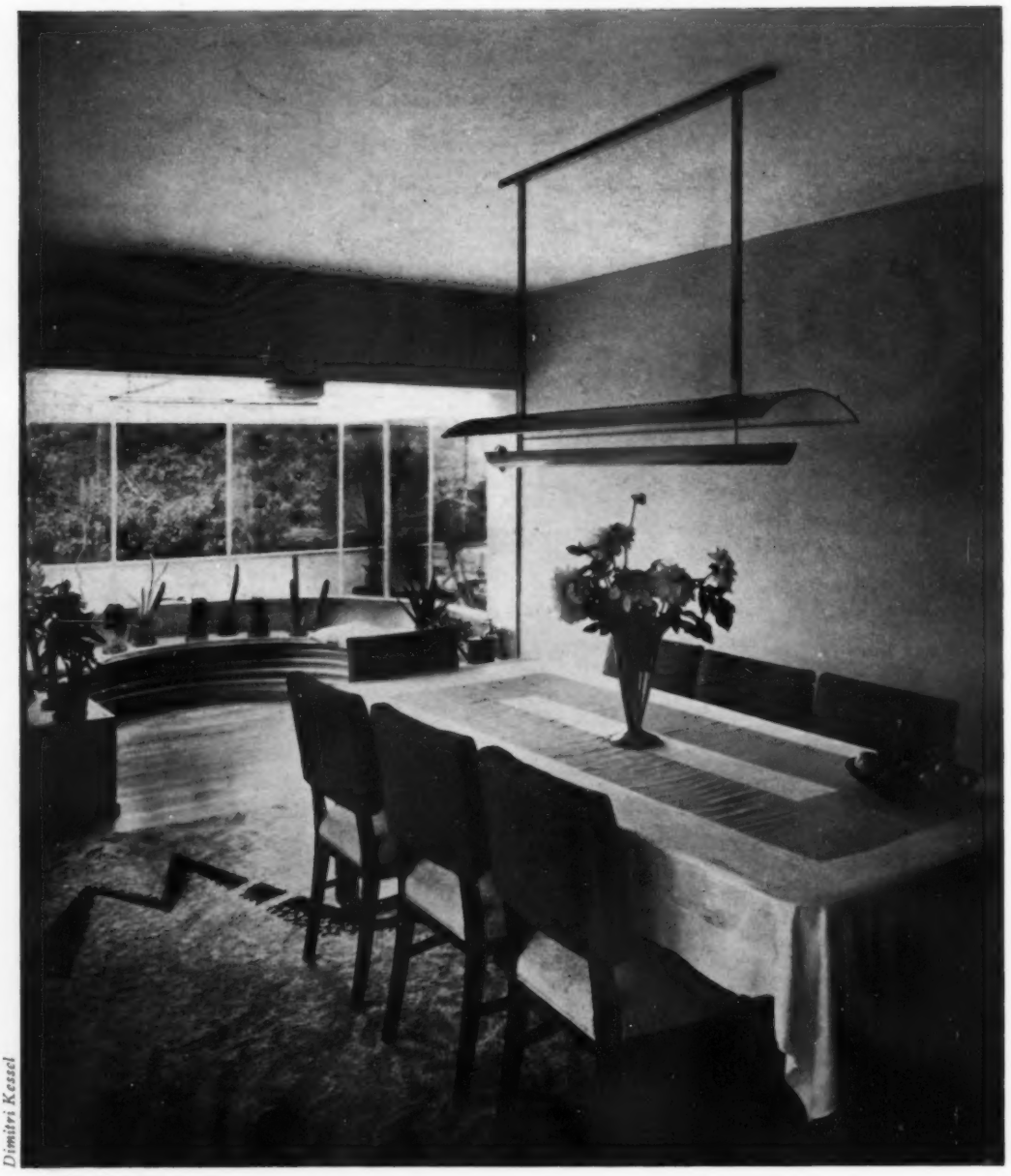




Grafoto

Grafoto

View from living room toward dining room (left), kitchen (center), and study (right).



Dimitri Kessel

Dining room. Terrace beyond bay is used during the summer as an open-air living-and-dining room.

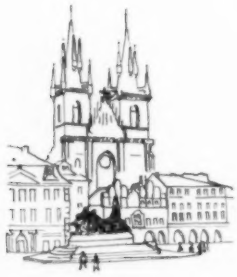
AIRPORT . . .

The newest and largest of Czechoslovakian civil airports—Ruzin Airport at Prague—serves as an important junction of international and local airlines. The airport building, designed by Adolph Benes, architect, contains a large waiting room, customs, ticket, and administration offices and an excellent restaurant.

Photos by Dimitri Kessel

Construction is largely of reinforced concrete, plate glass, and stainless steel. The concrete is faced with glazed white ceramic tile.

SCHOOL . . .



Prague, wherein is located the oldest university in Central Europe, numbers among its modern educational plants, the Reformed Grammar School which corresponds generally with a commercial high school in this country. Owned and administered by the State, it was designed by Eugen Linhart, architect. Its modern technical equipment includes a small astronomical observatory partly shown in the picture below.

Dimitri Kessel

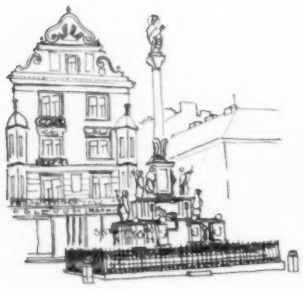
De Sandalo

A. Gubcevsky

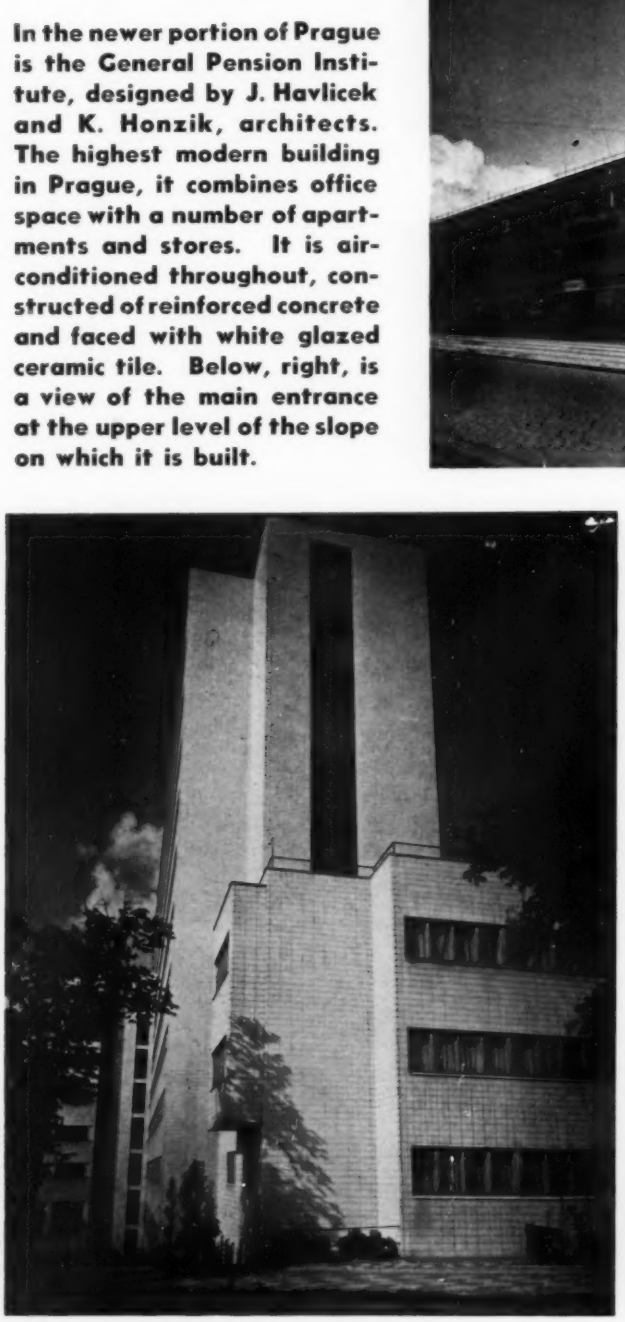
A. Gubcevsky

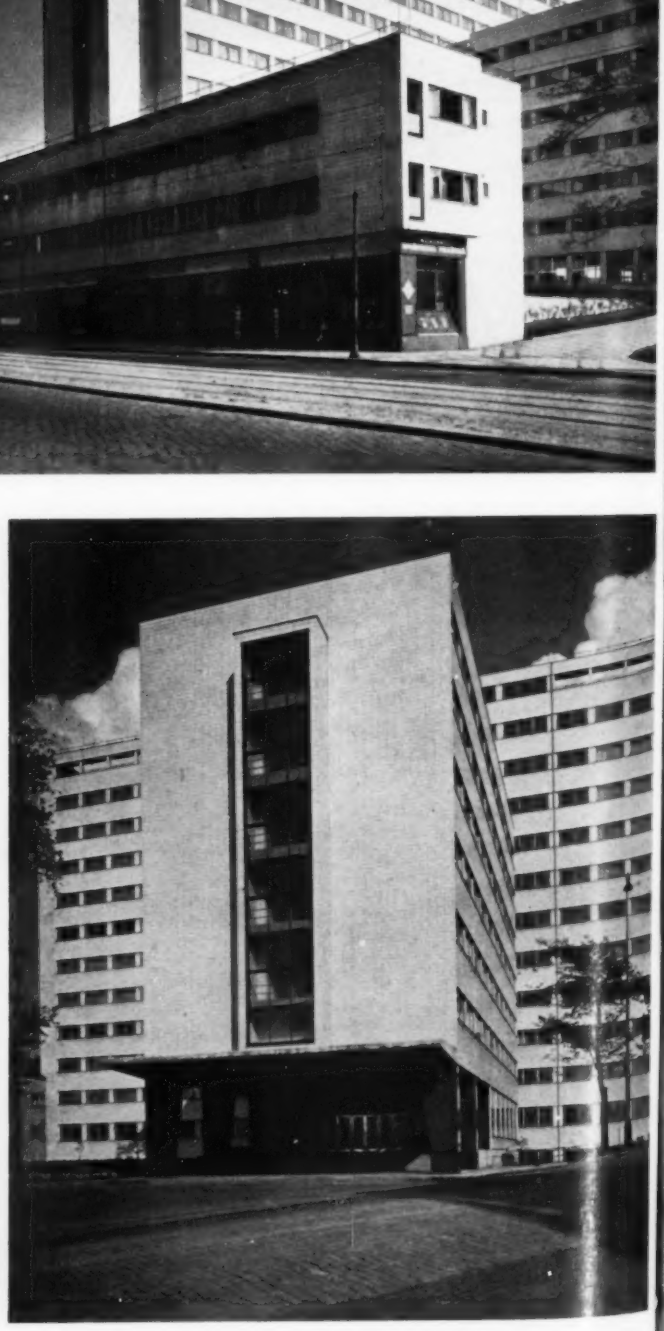
Unlike several other modern structures of Prague, this school is faced with cement stucco colored a deep buff. The recreation terrace on the roof, shown in detail on the facing page, is surfaced with tan-colored terrazzo. On this page, right, is a typical corridor lined with well-lighted and ventilated locker spaces.

OFFICE BUILDING . . .

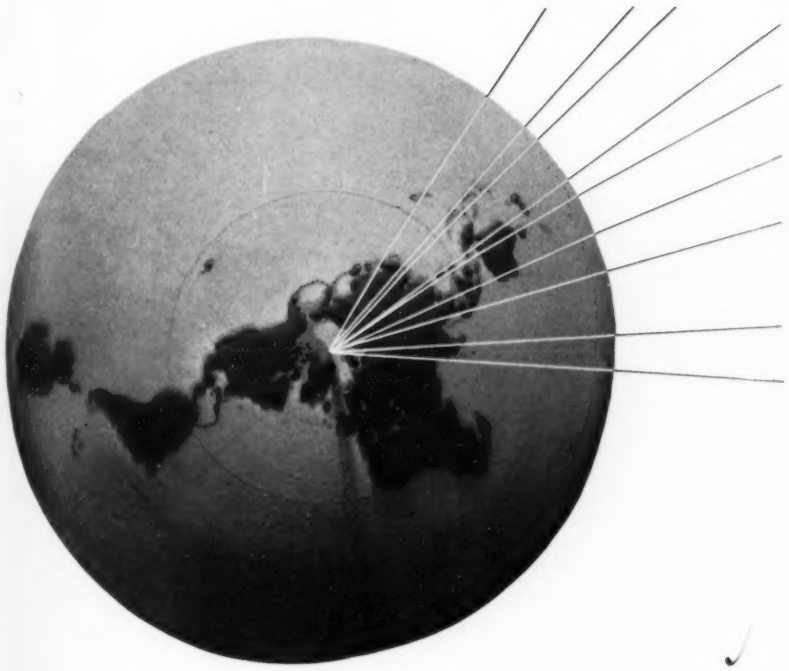


In the newer portion of Prague is the General Pension Institute, designed by J. Havlicek and K. Honzik, architects. The highest modern building in Prague, it combines office space with a number of apartments and stores. It is air-conditioned throughout, constructed of reinforced concrete and faced with white glazed ceramic tile. Below, right, is a view of the main entrance at the upper level of the slope on which it is built.





Photos by Dimitri Kessel



An air-wise map of the Earth, devised by Buckminster Fuller. It centers on the north pole, and in it all dry land appears to be one continent. Fuller calculates that if man were to be deployed over the pleasantly livable and arable areas there would be but 80 persons to the square mile. On this basis each family would have about 80 acres. He also calculates that if all the earth's 2⅓ billion people were to stand one upon another's heads, they would make nine complete chains to the moon. Compacted, they would make 10 billion cubic feet. "Yet if put under a gigantic hydraulic wine press, so that all the water and gas might be squeezed out of them, they could be compressed into one Empire State Bldg."

DYMAXIONIZING THE UNIVERSE... a review of Nine Chains to the Moon

TEN YEARS AGO there came out of Chicago an inventor with a small-scale model of an extraordinary sort of dwelling—an hexagonal-shaped affair suspended by cables from a central utility tower mast—which he argued could be factory-fabricated in quantities so large that the economies would be like those in the auto industry. The house was called the Dymaxion—a term coined from "dynamic" and "maximum." Soon, he predicted, it would be in production.

A decade has gone by. The Dymaxion House still remains an idea, but the world of architecture has changed considerably. If the changes seem revolutionary in character, then Buckminster Fuller, the Dymaxion engineer, can be held largely responsible. His ideas about prefabrication have penetrated far; it is now a general belief that inevitably the building field will be completely industrialized. Nor have the years been barren of tangible accomplishments. In 1933 came the Dymaxion Car, a 3-wheeled rear-engined streamlined "shelter-mobile" designed in collaboration with Starling Burgess, the racing yacht architect. In 1936, out of the Phelps-Dodge research laboratories, came his integrated bathroom, a structure with walls, floors, and fixtures designed all as a single compact unit.

Now comes a book* on the Dymaxion philosophy, and a new prediction that before July 12, 1948, the mass production of mechanical chassis of dwellings will attain "over a million units per annum, in the U. S. the curve to be rising rapidly therefrom at the end of the ten years." There are 21 other predictions, covering such diverse topics as population shifts, a mechanical stock exchange, new farm mechanics, socialization of leisure, labor evolution, insurance evolution, and the change in name of New York City to "Radio City", all neatly tabulated.

Forecasting is a necessary consequence of the Dymaxion philosophy which holds that everything in the universe is constantly in motion, and that if the cosmic forces are recognized and their interplay understood, then the inevitability of certain trends becomes apparent and various events in the line of evolution can be anticipated. To this extent Fuller is a materialist in his philosophy.

But he goes further: in an expanding universe, which he takes as his basic concept, the pattern of inevitability is revealed long in advance to those who have a teleologic perspective of the universe. At this point there creeps into his rather mechanistic philosophy a mysticism which is perhaps best understood if one remembers that Margaret Fuller of the Brook Farm transcendentalists was his great-aunt.

Man, so he states, is guided by a "phantom captain," who abandons ship at the instant of death. This captain has neither weight nor tangibility, but he has an infinite understanding and sympathy with all captains of mechanisms similar to his. What is this sympathy? It is "an intuitive awareness of perfection which serves as a universal yardstick relative to which any sense experience may be measured, and by virtue of which conscious selection may be made." Since some phantom captains are more sensitive than others, it is obvious that some individuals are favored to see farther ahead.

Into this idea of a superior and purposeful existence, which is expressed in fear and longing as the primary motivations of man, is blended the idea of an expanding universe. In such a universe it follows inevitably that the longing types of humanity should become dominant. Out of longing come the physical extensions—machinery,

***Nine Chains to the Moon. R. Buckminster Fuller. Published by J. B. Lippincott Company, Philadelphia and New York. 406 pages; maps, charts, diagrams, including a chronology of scientific events from antiquity up to 1936. $4.**

personal equipments, intangible services—which permit man to control his environment and to articulate himself into immortality. Generic to this "new and thrillingly immunized LIFE unfolding in fulfillment of age-old dreams of freedom and growth" is the inevitable development of a universal shelter service with its mass-produced scientific dwelling-machines—the Dymaxion, *Q. E. D.*

Such, in brief, is the Dymaxion philosophy. In setting it forth, Fuller (or rather, his phantom captain) mounts the soapbox, comes in from outer space, discovers "Earth" and "Man", translates energy into dollarability (as moron prime-movers, he calculates, men would earn $4.30 in a life-time of work if they were paid at the same rate as a hydro-electric generator), comes down through the ages, discovers Einstein and mathematics, span-spins from abstract thought to physical science, encounters Leonardo da Vinci (the first phantom captain to suggest the possibility of standardized mass-production houses), zooms across to America (the land colonized by the longing types of humanity), glorifies the rustless alloys, commemorates Henry Ford (the phantom captain who consolidated the scientific emergence), recommends the use of stored-up gold to provide reflecting surfaces for beamed radio transmission of power, scolds the communists, condemns finance capitalism (conveniently dramatized into wicked old "Fincap", who typifies fear), announces the impending socialization of the plenitudinous categories of production, throws in the sponge for the patent system, identifies the recirculation of metals as the factor that is upsetting the economic system ("scrap is changing Fincap willy-nilly into a good boy"), views with optimism the growth of the CIO as a manifestation of industrialization, harangues the architects and the building trades for having tried to kill off the idea of industrialization, razzes the "pre-fabricators", suggests the tearing down of all buildings under 10 stories in height in New York City, specifies the requirements for a scientific dwelling service, and finally spirals off into the future to eavesdrop on Jones who is having a *tête-à-tête* with a charming young lady from Planet 80XK23 in trapezoidal segment 727831 of the star layer of the expanding universe.

Time and space have no limitations in this book: as an adventure story of thought, which the jacket proclaims it to be, it is likely to leave the reader dizzy with its impudent flights of fancy. Even though he may disagree most heartily with the Dymaxion philosophy, it is also likely to stimulate the reader's own imagination.

The title itself, according to Fuller, was chosen to encourage and stimulate the broadest attitude toward thought. "Simultaneously, it emphasizes the littleness of our universe from the mind viewpoint. A statistical cartoon would show that if, in imagination, all of the people of the world were to stand upon one another's shoulders, they would make nine complete chains between the earth and the moon. If it is not so far to the moon, then it is not so far to the limits,—whatever, whenever or wherever they may be. Limits are what we have feared. So much has been done to make us conscious of our infinite physical smallness, that the time has come to dare to include the complete universe in our rationalizing."

Paradoxically, however, in sweeping aside the barriers of time and space, the Dymaxion philosophy sets up its own limitations. All is predicated on the hypothesis of an expanding universe: if science should disprove this, then the theory of a purposeful inevitability of events collapses like a pricked bubble. Nor does the anthropomorphic concept of a phantom captain guiding man help matters—this is nothing but complexity squared. Where do the individual phantom captains come from? In an expanding universe even a phantom species must have a finite beginning and a course of evolution. The question is not answered.

Likewise, in rationalizing human motivations into fear and longing, and the identifying individuals and even abstractions like ol' Fincap (another anthropomorphic specimen) with these forces, the logic leads straight to a choice of either black or white—with all the inbetween grays ignored. This is an over-simplification of life. Consider the book itself: it is black as well as white.

The book abounds with blunders—nonsequiturs and contradictions and plain errors of historical fact—inexcusable for anyone who writes in the name of science. "Mobilata" (data) and "vitalistics" (statistics) are thrown at the reader with extravagance but rarely with any credit as to source. Hardly any of the precepts set forth for scientific design are observed: inaccuracies do not reflect "precision control" nor does verbosity represent "doing the most with the least." Out of the welter of words it is difficult to extract a clear impression of the Dymaxion philosophy; always it is obscured by the soapbox tirades. Surely this is not a demonstration of the "segregation of functions" that makes for good design.

Nevertheless, all these faults can be forgiven for the vista which Fuller opens into the industrial Utopia ahead. Here is a new architecture to be had,—with a new life, thrilling and fine! But how?

It is not enough to say that this Utopia is inevitable. If it is possible to make predictions, it is also true that it becomes increasingly possible to negate those same predictions. This is implicit in the idea of environmental control, which Fuller himself identifies with the idea of scientific shelter. In fact, it is entirely conceivable that his book, intended to speed up industrialization, may be turned into a weapon of reaction to slow down the industrial advance.

The nearest Fuller comes to a detailed explanation of how the new scientific dwelling machines are to be brought into existence is the report by the young lady from Planet 80XK23 of what happened there: in the emergency of a civil war the X-ians discovered that these mechanisms provided a relatively safer survival, and therefore used them as temporary expedients but liked them so much that they never returned to their "humpty-dumpty vanity tailored habitats of pre-war days."

It is clear by implication, however, that government subsidy is the means whereby the Dymaxion dwellings are to be achieved. Here again the reader runs into a fog of thought. Fuller's interpretation of the evolution of society puts the emphasis entirely on the development of technology. Advances on the economic front and their interplay with advances made along the technical front do not come into consideration. Consequently, he has to beg the question: what kind of government will furnish such a subsidy? . . . In setting up the thesis that a new architecture will bring into existence a new society, it is also necessary for Fuller, or others, to explain the economics whereby the existing society can achieve this new architecture. Otherwise, the line of evolution is broken—even in an expanding universe.

C. THEODORE LARSON

Review of New Books

From "Europe Re-housed" by Elizabeth Denby

EUROPE RE-HOUSED. By Elizabeth Denby. W. W. Norton & Co., Inc., New York, 1938. 284 pages. 6 x 9 in. With over 100 illustrations, including 32 plates. Price, $3.50.

AFTER eight years of experience in slum clearance and rehousing work in England, the author of this book obtained a research fellowship for the study of rehousing on the Continent. She visited thirteen countries, but has limited her study to six of them—"two winners in the War, two losers, and two neutrals": France, Italy, Germany, Austria (Vienna), Sweden, and Holland.

This book contains very little statistical material and the statistics included are seldom comparable. It is difficult, consequently, for the reader to gain a clear impression of the situation as a whole. We have here, rather, a series of scattered descriptions of specific projects in the countries visited. These, to be sure, are not without value: many of the developments described and illustrated may offer useful suggestions to American designers, who, on a larger scale, have begun the work of slum clearance and rehousing in this country.

Walter Gropius has written a foreword to the book in which he declares that scattered efforts, however brilliant, must be integrated to be effective.

HOUSING YEARBOOK, 1938. Coleman Woodbury, Editor. National Association of Housing Officials, Chicago. 315 pages. 6¼ x 9¼ in. Price, $3.

THIS YEARBOOK is a compilation of seventeen articles on important aspects of the housing problem—some in official and some in private positions. Some of the titles and authors are: *The First Six Months of USHA* by Catherine K. Bauer; *FHA's Activities in 1937* by Stewart McDonald; *The Federal Home Loan Bank System's Work* by John H. Fahey; *Housing Activities of the Farm Security Administration* by Will W. Alexander; *The Significance of the Greenbelt Towns* by Tracy B. Augur and Walter H. Blucher; *The Architect's Place in Current Housing* by Alfred Kastner.

There is a directory of housing agencies. Included, too, are selected bibliographies on housing and on building codes.

THE MINOR ARCHITECTURE OF WORCESTERSHIRE. By W. M. Ingemann. John Tiranti, Ltd., London, 1938. 6½ x 12¾ in. 48 plates. Price, 21 shillings.

ONE IN A series of photographic studies on the minor domestic architecture of England. This is the first volume to be compiled by Mr. Ingemann, although the General Editor, Dexter Morand, has already issued a previous volume on *Minor Architecture of Suffolk*.

The author has dealt mainly with 17th and 18th century structures of the Cotswold area. Some reference is made to the typical Avon and Severn lowland types of cottages, but for the most part this portion of Worcestershire has been covered only sparsely because of the similarity of these cottages.

The photographs cover in particular two types of domestic architecture. First, the so-called "black and white" structures of roughly-hewn timbers and whitewashed brick and, second, the well-weathered limestone structures which are so often found in this district.

The plates have been assembled to furnish charming views of entire houses rather than dealing with any particular details or phases of the buildings.

WELDING HANDBOOK. Published by the American Welding Society, New York, 1938. Illustrated from line drawings, charts and photographs. 1,211 pages. 6½ x 9¼ in. Price: to members of the American Welding Society, $5.; to non-members, $6 in U. S. A., $6.50 elsewhere.

PRIMARILY issued for use by the metal industries, this volume—a first edition—has been developed by 90 authors. It has been prepared "to cover, first, the fundamentals of the various processes, second, the materials used and the testing methods involved, and third, the applications thereof."

DESIGN OF STEEL BUILDINGS. By Harold Dana Hauf. John Wiley & Sons, Inc., New York, Second Edition, 1938. 232 pages. Text, problems, drawings, diagrams, tables, formulae. Price, $2.75.

A TEXTBOOK on the design of steel-framed structures in which data on structural shapes and other material have been brought up to date. First issued in 1932.

DESCRIPTIVE GEOMETRY. By Floyd A. Smutz and Randolph F. Gingrich. D. Van Nostrand Co., Inc., New York,

(*Continued on page* 128)

Trend Notes on a Building World

Westinghouse designs a 5,000-year shelter

Design for Time-control . . .

LITTLE INTERESTED as most building designers may be in what the archeologist of 6938 may think of the culture of 1938, the "time capsule" (left), which Westinghouse sunk recently on the site of its exhibit building at the New York World's Fair has certain implications for building design. For the "time capsule", latest of a series of scientific "cornerstones", is an ambitious attempt to project some record of modern man 5,000 years into the future. And to achieve this, two things were essential: a compact collection of data on present-day science, art, and industry (mostly on microfilm) and a truly permanent structure for "housing" such information. This last became a design problem of the first importance, and it is significant that Westinghouse engineers were forced to abandon the natural materials to which the average building designer would have turned in such cases. Instead, they used a new metal—Cupaloy*—for the outer capsule, a new heat-resistant glass for the inner one, glass tape for packing, and an atmosphere of inert gas instead of air. Nor could they, in this particular "building type", rely upon methods of production ordinarily used in the building field. The alloy had to be produced and the capsule fabricated under controlled conditions with precision instruments. . . . Scarce though commissions for buildings to last 5,000 years may be, the architect may well keep an eye on such "stunts" as these, for time-control is of increasing importance in building design.

*Recipe for cupaloy: Melt the copper, then deoxidize it with boron. Add hardening briquettes of copper-chromium, mix in a "pinch" of silver and stir well while metal heats in a crucible to 2500° Fahrenheit. Cast in a mold and machine. Result is an alloy hard as steel which—unlike steel—receives deposits instead of being eaten away by corrosion

G. M. fries eggs on a cold stove

Heat without hotness . . .

ANOTHER *tour de force* from the publicity world not to be ignored by the building field was General Motors "Parade of Progress"—a national auto caravan to whip up interest in G-M's exhibit at the Fair. Carried the length and breadth of the land (in eight streamlined transport trucks already described in AR, 4/36, p. 333) were a series of demonstrations of recent developments from G-M's research laboratories. Of immediate interest to the building designer was a "cold stove" (lower left) on which eggs could be fried, water boiled, without scorching an interposed newspaper. Secret of this apparent contradition was a new induction furnace which, by magnetism, creates enough "molecular friction" in the pan to heat it. Although G-M's promotion men eagerly pointed out that it also "flashes sparks and makes aluminum rings jump into the air", building designers with new problems on their hands might do worse than to follow such developments.

(Additional Trend Notes on page 87)

Current Trends of Building Costs

Compiled by Clyde Shute, Manager, Statistical and Research Division, F. W. Dodge Corporation, from data collected by E. H. Boeckh & Associates, Inc.

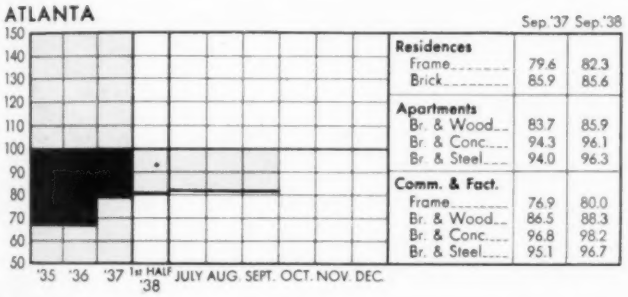
CURVES INDICATE control trends in the combined material and labor costs in the field of residential frame construction, the monthly curves being an extension of the local cost averages during the years 1935, 1936, and 1937. The base line, 100, represents the U. S. average for 1926-1929.

Tabular information gives cost index numbers relative to the 100 base for 9 common classes of construction, thus showing relative differences as to construction types for this year and last.

Cost comparisons or percentages involving two localities can easily be found by dividing one of the index numbers into the difference between the two. For example: if index A is 110 and index B, 95, (110-95)÷95 =.16. Thus costs in A are 16% higher than in B. Also costs in B are approximately 14% lower than in A: (110-95)÷110=.14.

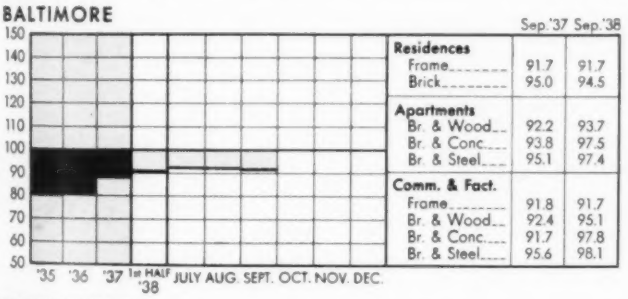
CONSTRUCTION COST INDEX U. S. average, including materials and labor, for 1926 - 1929 equals 100.

ATLANTA



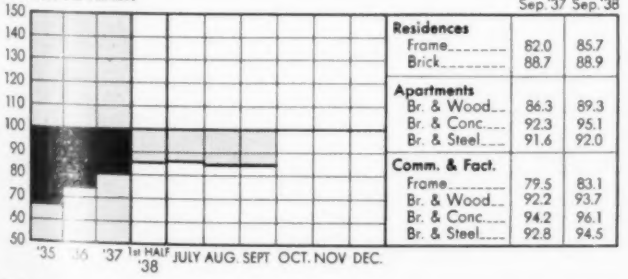
	Sep.'37	Sep.'38
Residences		
Frame	79.6	82.3
Brick	85.9	85.6
Apartments		
Br. & Wood	83.7	85.9
Br. & Conc.	94.3	96.1
Br. & Steel	94.0	96.3
Comm. & Fact.		
Frame	76.9	80.0
Br. & Wood	86.5	88.3
Br. & Conc.	96.8	98.2
Br. & Steel	95.1	96.7

BALTIMORE



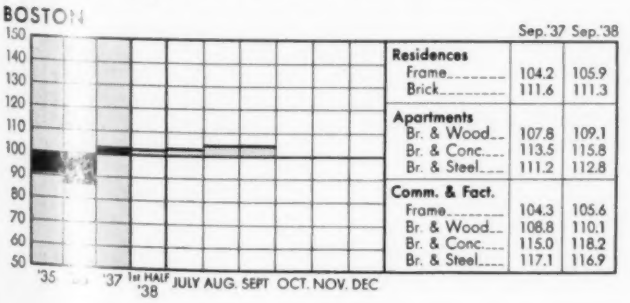
	Sep.'37	Sep.'38
Residences		
Frame	91.7	91.7
Brick	95.0	94.5
Apartments		
Br. & Wood	92.2	93.7
Br. & Conc.	93.8	97.5
Br. & Steel	95.1	97.4
Comm. & Fact.		
Frame	91.8	91.7
Br. & Wood	92.4	95.1
Br. & Conc.	91.7	97.8
Br. & Steel	95.6	98.1

BIRMINGHAM



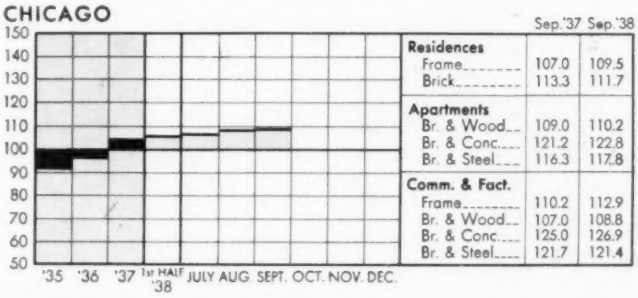
	Sep.'37	Sep.'38
Residences		
Frame	82.0	85.7
Brick	88.7	88.9
Apartments		
Br. & Wood	86.3	89.3
Br. & Conc.	92.3	95.1
Br. & Steel	91.6	92.0
Comm. & Fact.		
Frame	79.5	83.1
Br. & Wood	92.2	93.7
Br. & Conc.	94.2	96.1
Br. & Steel	92.8	94.5

BOSTON



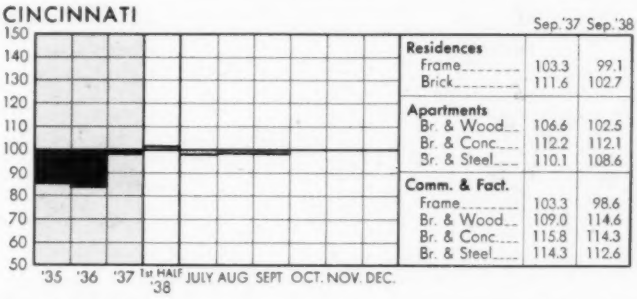
	Sep.'37	Sep.'38
Residences		
Frame	104.2	105.9
Brick	111.6	111.3
Apartments		
Br. & Wood	107.8	109.1
Br. & Conc.	113.5	115.8
Br. & Steel	111.2	112.8
Comm. & Fact.		
Frame	104.3	105.6
Br. & Wood	108.8	110.1
Br. & Conc.	115.0	118.2
Br. & Steel	117.1	116.9

CHICAGO



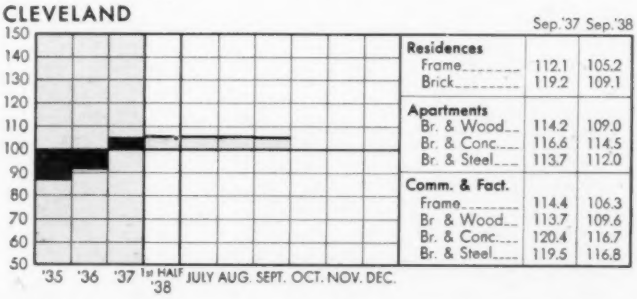
	Sep.'37	Sep.'38
Residences		
Frame	107.0	109.5
Brick	113.3	111.7
Apartments		
Br. & Wood	109.0	110.2
Br. & Conc.	121.2	122.8
Br. & Steel	116.3	117.8
Comm. & Fact.		
Frame	110.2	112.9
Br. & Wood	107.0	108.8
Br. & Conc.	125.0	126.9
Br. & Steel	121.7	121.4

CINCINNATI



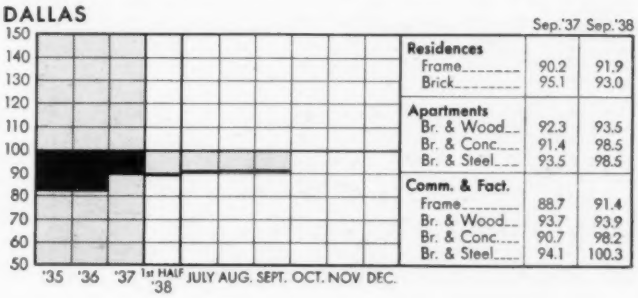
	Sep.'37	Sep.'38
Residences		
Frame	103.3	99.1
Brick	111.6	102.7
Apartments		
Br. & Wood	106.6	102.5
Br. & Conc.	112.2	112.1
Br. & Steel	110.1	108.6
Comm. & Fact.		
Frame	103.3	98.6
Br. & Wood	109.0	114.6
Br. & Conc.	115.8	114.3
Br. & Steel	114.3	112.6

CLEVELAND



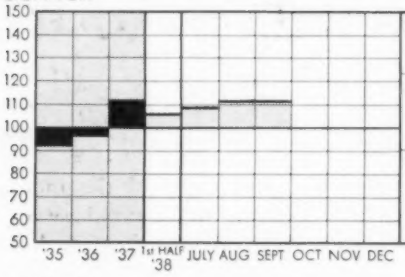
	Sep.'37	Sep.'38
Residences		
Frame	112.1	105.2
Brick	119.2	109.1
Apartments		
Br. & Wood	114.2	109.0
Br. & Conc.	116.6	114.5
Br. & Steel	113.7	112.0
Comm. & Fact.		
Frame	114.4	106.3
Br. & Wood	113.7	109.6
Br. & Conc.	120.4	116.7
Br. & Steel	119.5	116.8

DALLAS



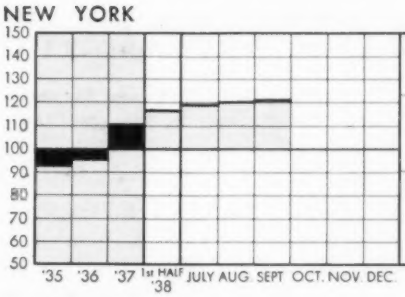
	Sep.'37	Sep.'38
Residences		
Frame	90.2	91.9
Brick	95.1	93.0
Apartments		
Br. & Wood	92.3	93.5
Br. & Conc.	91.4	98.5
Br. & Steel	93.5	98.5
Comm. & Fact.		
Frame	88.7	91.4
Br. & Wood	93.7	93.9
Br. & Conc.	90.7	98.2
Br. & Steel	94.1	100.3

DENVER



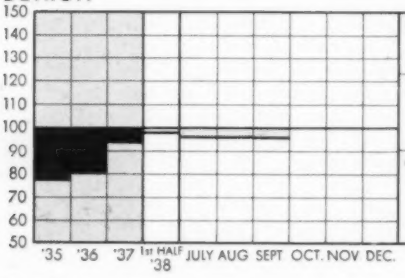
	Sep.'37	Sep.'38
Residences		
Frame	117.7	111.0
Brick	120.7	111.4
Apartments		
Br. & Wood	115.2	106.3
Br. & Conc.	116.0	114.7
Br. & Steel	115.3	113.1
Comm. & Fact.		
Frame	121.3	113.4
Br. & Wood	111.8	107.9
Br. & Conc.	117.4	116.0
Br. & Steel	118.8	115.7

NEW YORK



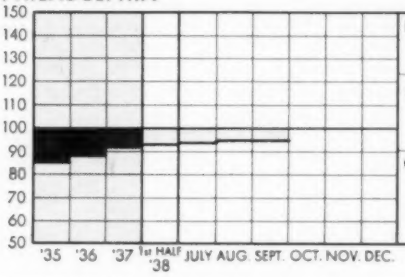
	Sep.'37	Sep.'38
Residences		
Frame	118.4	120.5
Brick	123.9	122.8
Apartments		
Br. & Wood	119.0	120.8
Br. & Conc.	127.3	129.9
Br. & Steel	123.5	125.1
Comm. & Fact.		
Frame	121.1	123.9
Br. & Wood	116.4	117.9
Br. & Conc.	128.5	132.7
Br. & Steel	127.6	129.0

DETROIT



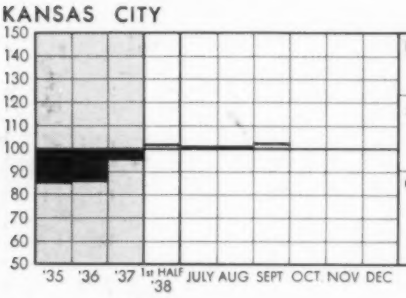
	Sep.'37	Sep.'38
Residences		
Frame	98.3	96.2
Brick	105.4	100.8
Apartments		
Br. & Wood	102.2	101.1
Br. & Conc.	108.6	108.1
Br. & Steel	107.2	107.1
Comm. & Fact.		
Frame	98.4	95.8
Br. & Wood	102.7	103.0
Br. & Conc.	110.8	109.4
Br. & Steel	112.4	111.9

PHILADELPHIA



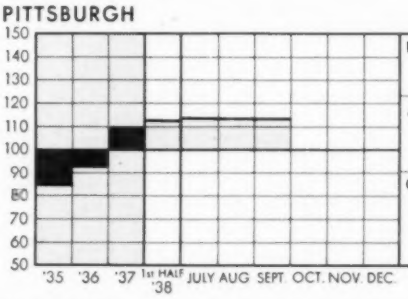
	Sep.'37	Sep.'38
Residences		
Frame	91.3	95.0
Brick	98.6	100.4
Apartments		
Br. & Wood	96.1	100.5
Br. & Conc.	99.1	105.1
Br. & Steel	99.4	102.5
Comm. & Fact.		
Frame	89.0	93.9
Br. & Wood	98.9	103.4
Br. & Conc.	101.4	107.5
Br. & Steel	101.9	104.0

KANSAS CITY



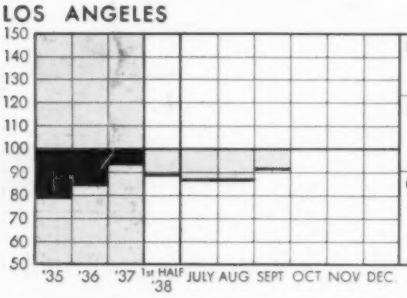
	Sep.'37	Sep.'38
Residences		
Frame	96.5	102.1
Brick	105.0	107.9
Apartments		
Br. & Wood	101.8	107.7
Br. & Conc.	109.7	118.0
Br. & Steel	107.7	115.0
Comm. & Fact.		
Frame	95.0	101.6
Br. & Wood	104.9	110.9
Br. & Conc.	112.4	121.3
Br. & Steel	113.6	119.1

PITTSBURGH



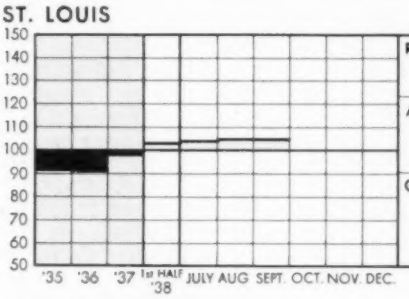
	Sep.'37	Sep.'38
Residences		
Frame	115.5	113.2
Brick	123.3	116.8
Apartments		
Br. & Wood	118.7	115.0
Br. & Conc.	118.8	117.0
Br. & Steel	115.6	113.5
Comm. & Fact.		
Frame	115.1	113.4
Br. & Wood	120.7	116.0
Br. & Conc.	120.4	118.8
Br. & Steel	118.5	116.4

LOS ANGELES



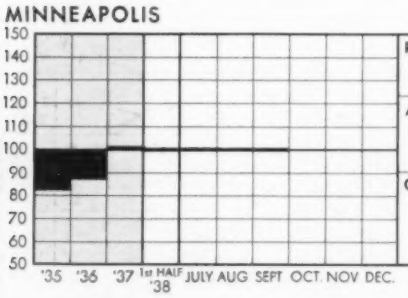
	Sep.'37	Sep.'38
Residences		
Frame	94.5	91.1
Brick	98.6	96.9
Apartments		
Br. & Wood	95.3	96.8
Br. & Conc.	98.8	103.1
Br. & Steel	101.1	104.0
Comm. & Fact.		
Frame	95.7	95.6
Br. & Wood	93.4	95.5
Br. & Conc.	98.6	104.1
Br. & Steel	104.2	103.2

ST. LOUIS



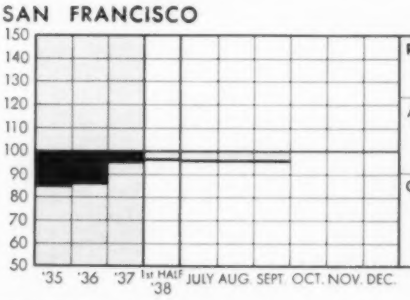
	Sep.'37	Sep.'38
Residences		
Frame	100.6	105.1
Brick	109.0	108.8
Apartments		
Br. & Wood	105.9	108.7
Br. & Conc.	115.0	118.5
Br. & Steel	113.5	116.2
Comm. & Fact.		
Frame	100.7	105.4
Br. & Wood	107.2	109.0
Br. & Conc.	119.3	119.8
Br. & Steel	119.4	119.8

MINNEAPOLIS



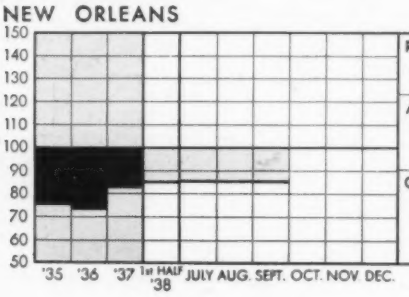
	Sep.'37	Sep.'38
Residences		
Frame	105.1	100.4
Brick	111.2	106.4
Apartments		
Br. & Wood	106.9	103.2
Br. & Conc.	113.1	112.7
Br. & Steel	111.4	110.5
Comm. & Fact.		
Frame	106.8	101.2
Br. & Wood	105.0	102.8
Br. & Conc.	116.3	116.3
Br. & Steel	116.0	114.3

SAN FRANCISCO



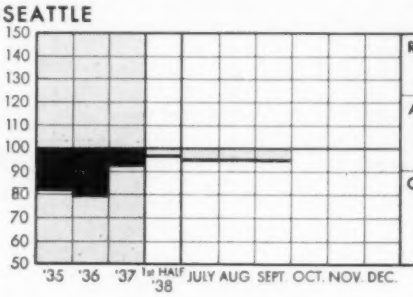
	Sep.'37	Sep.'38
Residences		
Frame	104.2	97.5
Brick	110.6	105.4
Apartments		
Br. & Wood	106.7	102.3
Br. & Conc.	117.6	116.0
Br. & Steel	114.4	112.5
Comm. & Fact.		
Frame	103.0	95.9
Br. & Wood	109.9	105.9
Br. & Conc.	120.5	121.0
Br. & Steel	117.5	116.2

NEW ORLEANS



	Sep.'37	Sep.'38
Residences		
Frame	85.3	86.8
Brick	88.6	87.9
Apartments		
Br. & Wood	86.4	89.0
Br. & Conc.	88.2	92.8
Br. & Steel	92.0	96.0
Comm. & Fact.		
Frame	85.0	85.5
Br. & Wood	86.2	89.6
Br. & Conc.	86.4	91.9
Br. & Steel	93.9	96.0

SEATTLE



	Sep.'37	Sep.'38
Residences		
Frame	98.0	95.4
Brick	108.6	103.4
Apartments		
Br. & Wood	105.3	103.0
Br. & Conc.	121.5	119.9
Br. & Steel	116.4	115.6
Comm. & Fact.		
Frame	96.8	92.8
Br. & Wood	109.6	107.8
Br. & Conc.	120.7	126.2
Br. & Steel	120.1	120.4

Mott Studios

Stairway to residence, Beverly Hills, California, designed by Gordon B. Kaufman

OUTDOOR STAIRWAYS

Photos by Ph. B. Wallace

1

George H. Van Anda

3

George H. Van Anda

2

Albert E. Cassaud

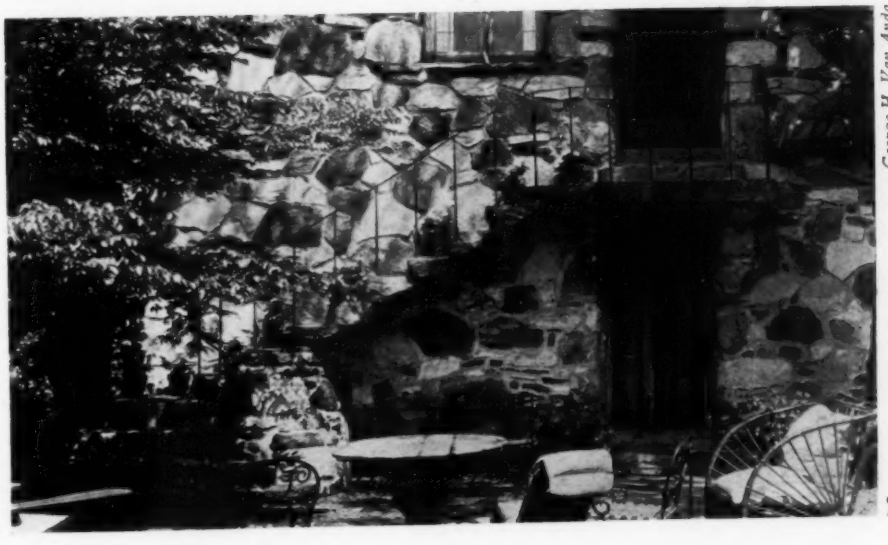
4

George H. Van Anda

5

George H. Van Anda

6



George H. Van Anda

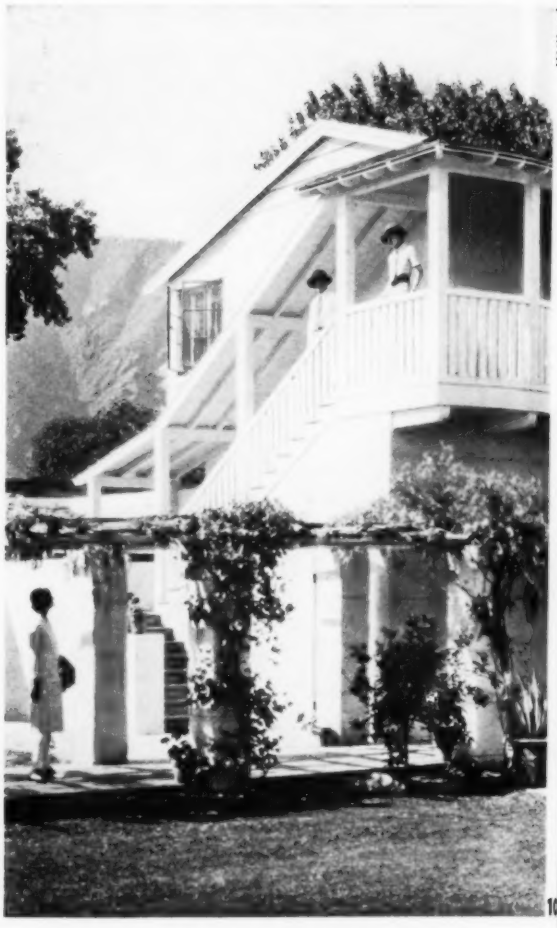
7

On facing page: 1 is in Philadelphia, Pa., R. R. McGoodwin, architect; 2 was designed by H. E. Woodsend for a residence in Harriman, N. Y.; 3 is in Cob Cob, Conn., H. E. Woodsend, architect; and 4 is in Los Angeles, Calif., Roy Selden Price, architect.

On this page: 5 is a covered stairway at Lake Sunapee, N. H., designed by Prentice Sanger. 6, at Mamoroneck, N. Y., is the work of James Bevan; and 7 is at Greenwich, Conn., H. E. Woodsend, architect.

Mott Studios

8



10

Tebbs & Knell, Inc.

9

11

Mott Studios

12

Lucy Lamar

13

Miles Berne

14

On facing page: 8 is a stairway at Hollywood, Calif., designed by Carl Jules Weyle; 9 is at San Antonio, Texas; 10 is in Palm Springs, Calif., Myron Hunt, architect; and 11, designed by John Byers, is in Hollywood, Calif.

On this page: 12 is at Beverly Hills, Calif., of which George Washington Smith was the architect; 13 is at Easthampton, Long Island, and was designed by Robert Tappan; and 14 is in Beverly Hills, Calif., Roy Seldon Price, architect.

Mott Studios

15

Tebbs & Knell, Inc.

17

George H. Van Anda

16

Samuel H. Gottscho

18

George H. Van Anda

19

Courtesy Museum of Modern Art

20

21

On facing page: 15 is in Brentwood Heights, Calif., John Byers, architect; 16, at Greens Farms, Conn., was designed by Walter Bradnee Kirby; 17 is in Richmond, Va., Duncan Lee, architect; and 18 is in Wychwood, N. J., Ray O. Peck, architect.

On this page: 19 is in New York City, Lawrence Peck, architect; 20 is in Berkeley, Calif., William Wilson Wurster, architect; and 21 was designed by Eugene Schoen and Sons for a house in Washington, D. C.

Courtesy Museum of Modern Art

22

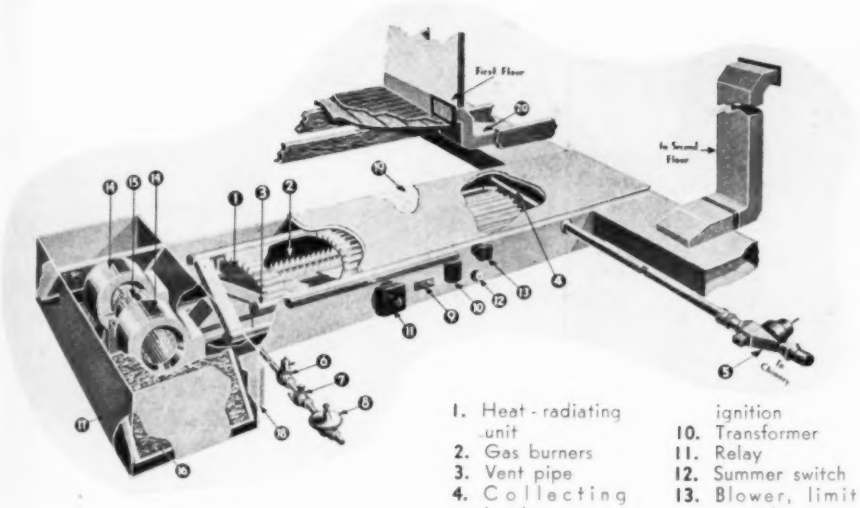
Robert Stoner

Courtesy Museum of Modern Art

23

22 is a spiral stairway on the roof of a villa at Savoye-sur-Seine, France, designed by Le Corbusier and Jeanneret; 23, also designed by Le Corbusier and Jeanneret, is at Paris, France. 24 is another spiral stairway for a residence at New Hartford, Conn., Howe and Lescaze, architects.

Trend Notes (Continued from page 76)



1. Heat-radiating unit
2. Gas burners
3. Vent pipe
4. Collecting header
5. Draft blower and motor
6. Automatic gas valve
7. Main gas valve
8. Pressure regulator
9. Electrodes for ignition
10. Transformer
11. Relay
12. Summer switch
13. Blower, limit control
14. Double blower
15. Blower motor
16. Filters
17. Blower housing
18. Blower control
19. Air-cell insulation
20. Take-off pipes

A furnace hung from the ceiling . . .

ALTHOUGH THE DEVELOPMENT of heating equipment has forged steadily ahead in recent years, so that by constant refinement the stove of yesterday has become the complex heating machine of today, it remained for Gasconaire, Inc. (3255 Goldner Ave., Detroit) to dramatize the morphology of the lowly stove. Introduced last month was their gas-fired Overhead *Gasconaire* (above). Dropping even the outward form of a furnace—to which gas-fired units as a rule have stubbornly clung—*Gasconaire* is instead a horizontal organization of all elements required to automatically filter, heat, humidify, and circulate the air. Suspended from the basement ceiling, the lightweight factory-built units enclosed in their own insulated jackets constitute—as the manufacturers proudly state—the first furnace "you can walk under". . . . Also with an eye to the value of basement space are the new gas-fired winter air-conditioners announced by Surface Combustion Corporation (Toledo, O.). Designed for the low cost housing field, new models conform to all specifications of SCC's *Janitrol* line. Main emphasis, however, is laid on space-saving qualities: vertical model takes only 22" x 25½" floor area, horizontal one is only 52" high. . . . Even the fireplace refuses to be obsoleted: latest addition to this field is Majestic Company's (Huntington, Ind.) new circulating fireplace. This prefabricated unit of electrically welded 3/16" steel plate will sell at prices low enough to put it within range of the low-cost home.

Claimed by Herman Nelson Corporation (Moline, Ill.) for its new propeller-fan type unit heater are all the advantages of the *hiJet* line plus larger face area, quieter and smoother operation, increased efficiency. Entire heating element is one-piece brass, eliminating weakened construction due to contraction and expansion. . . . Link-Belt Company (Chicago) has out a new model commercial stoker which can handle up to 3,500 sq. ft. radiation. Increased efficiency is claimed for *Power-Flex* burning head, which burns both low-fusion, non-caking bituminous and high-fusion caking coals. . . . Carrier Corporation (Syracuse, N. Y.) has announced a moderate-cost room ventilator which filters, circulates and mixes outside and inside air. Coming in two sizes, ventilator fits any window, requires only an electric plug.

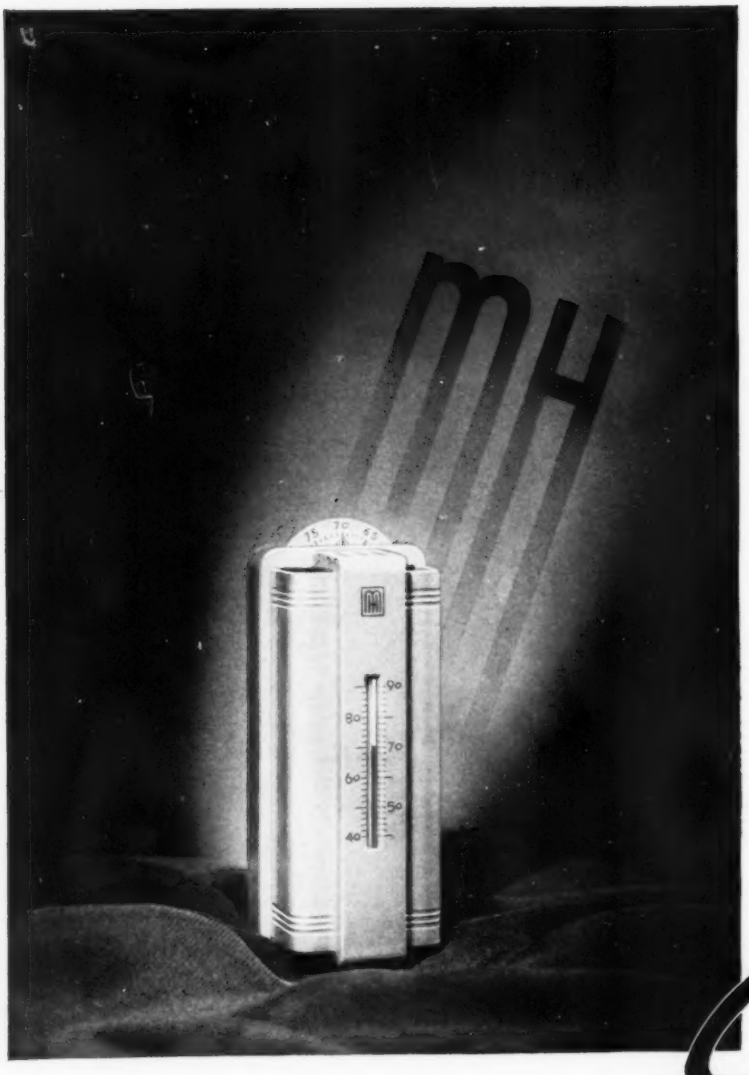
Temperature control checks corrosion

HAVING ALREADY DRAFTED her hot springs to heat her greenhouses and warm her swimmers, Reykjavik—capital of tiny, frigid Iceland—has now laid plans for harnessing more of the natural hot water. Recently drawn plans call for a system adequate to heat half the dwelling units of the capital city at the start. . . . But hot water, however heated, is destructive to the water supply system. Engineers, estimating that corrosion activity doubles with every 10° rise in temperature, have evolved such methods of combating corrosion as the electrolytic process described in AR, 8/38, p. 57. Another method of at least checking the effects of corrosion has recently been perfected by Anthracite Industries, Inc. (New York City), the use of a *water temperature regulator*. Said AII engineers: hot-water systems unequipped with automatic regulation undergo alternate increases and decreases of temperature. The consequent surges of circulation stir up rust. A simple, inexpensive regulator now available permits water to heat at a steady rate, precipitate rust.

Paints that "blush" and smell . . .

RECENT DEVELOPMENTS in finishing and surfacing materials indicate many potentialities for the future. Already reported are paints that extinguish fires (AR,11/37,p.37): but now, according to *Nation's Business,* we are to see paints that get so excited in the face of rising temperatures that they change their colors! A series, designed to register temperatures from 104° to 464° F., is shortly to be marketed. Some of the colors are retroactive, some change permanently. . . . From *National Painters* comes word of the immediate practicability of both deodorized and reodorized paints. A commercial deodorizer is already available which, when mixed with paint, effectively kills its characteristic odor. Moreover, according to *NP*, it is now possible to reodorize

(Continued on page 132)



THE *Symbol* OF THE NEW AUTOMATIC HEATING

Recent improvements have revolutionized automatic heating. The Symbol of these improvements and of the seldom seen control system that actually makes Automatic Heating automatic is the smartly styled Acratherm. More than a thermostat, the Acratherm embodies the exclusive "M-H" Principle of Heat Acceleration. The new Automatic Heating equipment, with the new Minneapolis-Honeywell Controls, will bring you carefree winter comfort. Though they cost more than ordinary controls, most dealers supply them as standard, or at but slight extra cost. Look for the "M-H" Symbol. It means you are getting the best.

The above advertising message will be carried to millions of readers through the pages of The SATURDAY EVENING POST and TIME Magazine . . . Minneapolis-Honeywell controls will lend prestige to every job.

MINNEAPOLIS-HONEYWELL

BROWN INDUSTRIAL INSTRUMENTS
NATIONAL PNEUMATIC CONTROLS
MINNEAPOLIS-HONEYWELL REGULATOR
COMPANY...MINNEAPOLIS, MINNESOTA

Control Systems

BUILDING TYPES

F. S. Lincoln

HOUSES . . . . . $15,000-$25,000

FORTHCOMING 1938 STUDIES: Houses ($25,000 and up) — November; Office Buildings — December. PRECEDING 1938 STUDIES. Apartments — September; Hospitals — August; Theatres — July; Factories — June; Schools — May; Houses ($7,500-$15,000) — April; Houses ($7,500 and under) — March; Retail Stores — February; Hotels — January.

ARCHITECTURAL
RECORD

COMBINED WITH
AMERICAN ARCHITECT AND ARCHITECTURE

The $15,000-to-$25,000 House

This is the third of four studies on residences to be presented in the RECORD during 1938. In March the small one-family house, costing not over $7,500 was presented; and in April, houses ranging in price from $7,500 to $15,000. Next month, Building Types will be devoted to residences above the $25,000 limit.

TOPICAL INDEX

TIME-SAVER STANDARDS DATA	Page
Outdoor Living Areas	91
Drainage—Surface, catch basins, inlets	92
—Gutters	93
—Subsurface, walks and drives	94, 95
Curb and gutter construction	93
Walks—construction, surfacing	94
Driveways—construction, surfacing	95

ILLUSTRATED CASE STUDIES	Page
Far West	
Lincoln house, San Marino, Calif.	96
French house, Palm Springs, Calif.	96
Kershner house, Los Angeles, Calif.	100
Ross house, Seattle, Wash.	103
Middle West	
Heppes house, Hinsdale, Ill.	104
Reynolds house, Glencoe, Ill.	106
Jarre house, Grosse Pointe, Mich.	108
Scheu house, St. Louis Co., Mo.	110
South	
Akerman house, Orlando, Fla.	112
Greeno house, Biltmore Forest, N. C.	114
Northeast	
McLaughlin house, Germantown, Pa.	116
Williams house, Madison, N. J.	118
Hohe house, Larchmont, N. Y.	120
Melnick house, Brookline, Mass.	122
Smith house, New Canaan, Conn.	124

SINCE EVERY house design is based on human requirements—a specification for family living—a designer selects materials and equipment and evolves a form, within necessary limits of space and cost, to meet the specification. Variations such as cost and size do not materially change the fundamental problem nor the method by which it is finally solved; though either factor or both may complicate it.

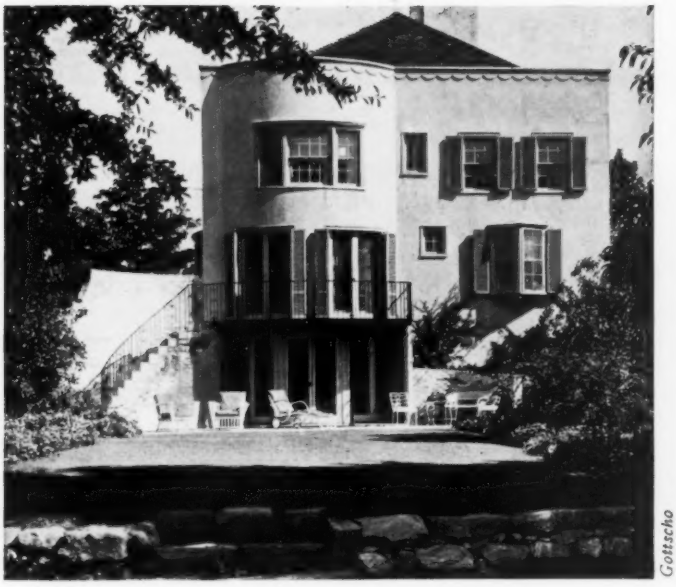
Because cost is so generally recognized as a broad classification of types, it has been used to designate the four parts of the RECORD's 1938 studies on homes. The survey of $7,500 houses, published in April, revealed that the small individually designed house is, apart from surface appearance, largely a standardized type. Judging from designs submitted to the RECORD this standard is acceptable to many owners who pay twice or three times this amount for their houses.

Where minima govern sizes, number and arrangement of spaces and equipment of the small one-family house, larger houses, meeting the same fundamental specifications, provide greater area, more spaces often more comfortably arranged, and more equipment designed to lessen the labor of housekeeping. Within cost limitations imposed by a $25,000 top, such expansion seldom takes place in all directions simultaneously.

Some of the types of expansion noted in the houses selected for study in the following pages include: increased dimensions, or added living areas such as "quiet" rooms, hobby or playrooms, bars, gardens, terraces, and other outdoor living areas. Expansion in equipment or utilitarian spaces may include: built-in furniture, more completely engineered and equipped heating or air-conditioning systems, more expensive plumbing fixtures, tailor-made radios, and the like. A garage, usually for two cars, is an almost universal adjunct.

Time-Saver Standards based upon minimum clearances and dimensions of commonly used furniture, and equipment and requirements for service systems, have been presented in earlier studies. Time-Saver Standards in this study are devoted to fundamental outdoor design problems.

Geo. D. Hainbs



Gottscho

At left, garden terrace, house of Frank Beetson, Flintridge, Calif.; Marston & Maybury, architects. Above, terrace, house of William H. Baldwin, New Canaan, Conn.; Cameron Clark, architect.

Outdoor Living Areas

DEVELOPMENT OF outdoor areas for living purposes requires as much study as do those within-doors. The accompanying checklist is intended to recall to the designer purposes to be served in providing such outdoor units. The list may be reorganized, adapted or amplified at will.

It is recognized that many schemes may be evolved for a given plot, each satisfactory in that it fulfills a set of requirements. Therefore precise rules and recommendations are not within the scope of this study.

Living areas

A narrow definition of outdoor living areas eliminates all but those definitely planned for dining, relaxing, playing, entertaining, reading, etc. Placement of such areas in relation to the house is a matter for study in reference to: ease of access from indoors; convenience for service. In relation to outdoor factors, the following are important: placement for sun, shade, summer breezes; degree of privacy desired; utilization of pleasant outlook; circulation. Depending on the importance assigned to the preceding factors, house and landscape design may be modified to overcome or enhance existing natural conditions.

In planning, constructing, and equipping outdoor living areas, the following are important: sizes, dimensions, and clearances adequate to contain furniture, equipment, and persons using them; foundation, structure, and surfacing of areas to suit their purpose; and furniture and equipment for lighting, shade, radio, water supply, and similar services.

Time-Saver Standards on the following pages present methods of constructing common outdoor units. Data have been assembled from material compiled by A. D. Taylor, Landscape Architect, President, American Society of Landscape Architects. All information reflects common practise.

Bibliography

Art of Home Landscape, by M. E. Bottomley. A. T. De La Mare, New York. 1935. 239 pages, illus.

Design of Small Properties, by M. E. Bottomley. Macmillan Co., New York. 1926. 233 pages, illus.

The Garden Handbook, by Mary Rutherford Jay. Harper & Bro., New York. 1931. 284 pages, illus.

Landscaping the Home Grounds, by Leonidas W. Ramsey. Macmillan Co., New York. 1930. 169 pages, illus.

Landscape Garden Series, edited by Ralph Rodney Root. The Garden Press, Davenport, Ia. 1921. 10 vols., 400 pages, illus.

CHECKLIST for OUTDOOR AREAS

TYPES OF AREAS

Public areas
Lawn, planting area, entrance drive, etc., facing on public highway

Utility areas
Service court; service entry; drying yard; refuse disposal area; garage; kitchen or vegetable garden; children's play area; tool and equipment storage space

Living areas
Porch—living or dining; terrace—living or dining; seclusion area; cooking area—outdoor fireplace, grill, barbeque; sunbathing area—deck, garden, etc.; exercise area; hobby area; game area, court; pleasure garden; pool—fish, lily, reflecting, swimming; court, patio; lawn; garden house; arbor, trellis

BOUNDARIES, CIRCULATION

Walls, fences
Retaining; boundary; ornamental

Walkways
Entrance; service; garden

Roadways
Entrance drive; service drive; private road; bridle path

SERVICE SYSTEMS

Water supply
Lawns; planting areas; gardens—vegetable and pleasure; pools—fish, lily, reflection, swimming; service, as car-washing, etc.; garden structures, outbuildings, etc.; hobby areas

Drainage
Subsurface; surface; garden structures, outbuildings, pools, etc.

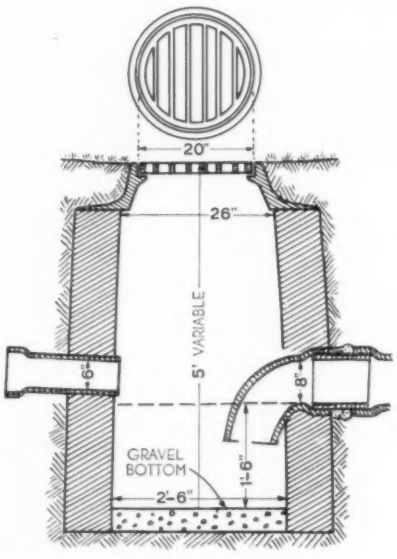
Lighting and power
Entrances; garages, outbuildings, hobby areas; roadways, walkways; garden and grounds

OUTDOOR AREAS – DRAINAGE DETAILS

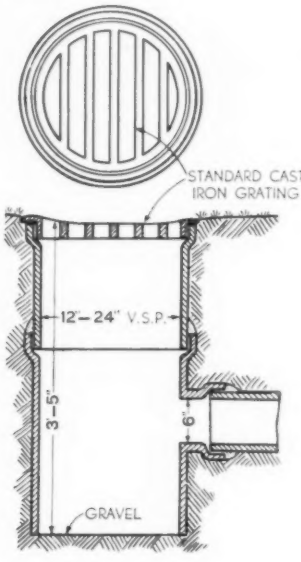
INFORMATION contained in the notes and drawings on this and the following three pages is based on common practice. However, other methods than those illustrated will often prove entirely satisfactory; the data are intended to serve as guides in developing solutions to individual problems.

In some cases data may be adapted to other structures than those expressly indicated. Walkway surfacing, for instance, is similar to terrace surfacing.

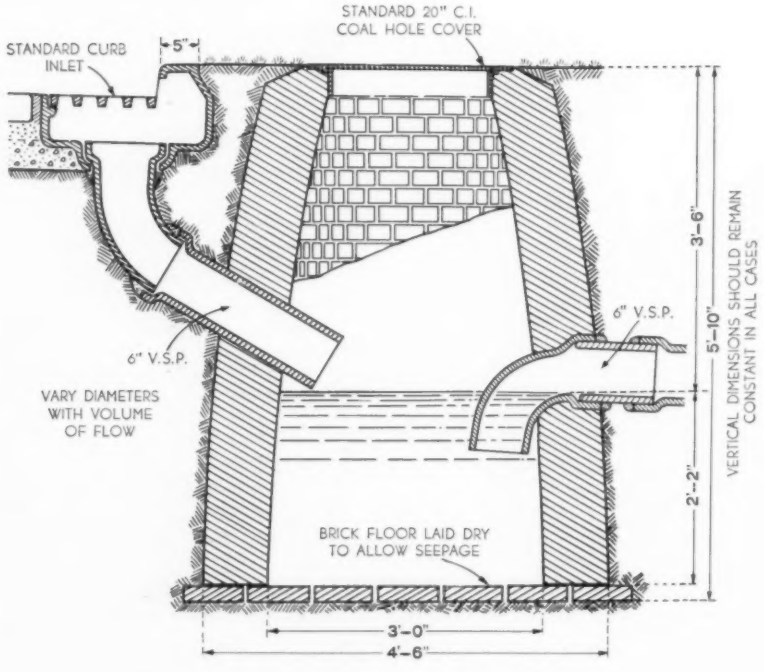
CATCH BASINS



BRICK OR CONCRETE



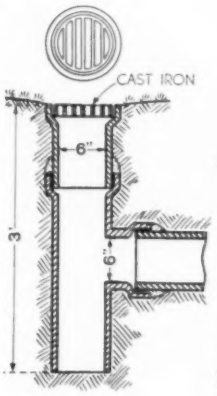
VITRIFIED SEWER PIPE



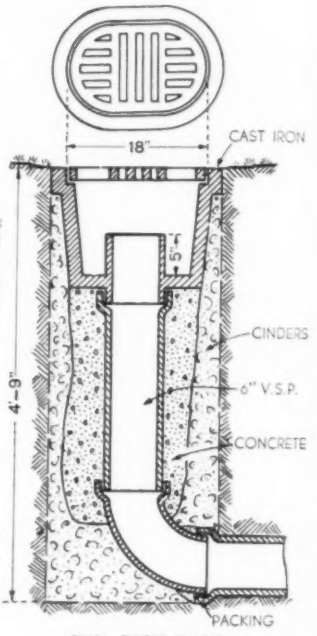
CATCH BASIN WITH CURB INLET

SCALE: $\frac{1}{2}$" = 1'–0"

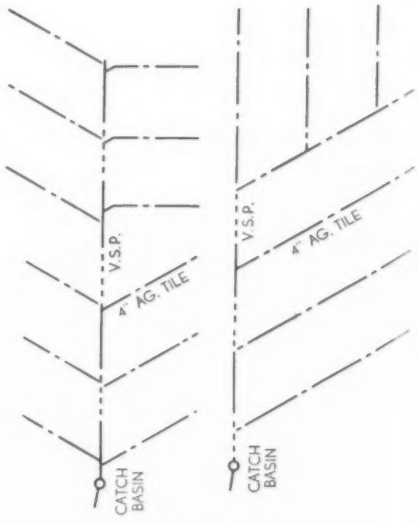
INLETS



VITRIFIED SEWER PIPE



OVAL PARK INLET



TYPICAL PIPE FIELD LAYOUTS

NO SCALE

Prepared by A. D. TAYLOR LANDSCAPE ARCHITECT

TIME-SAVER STANDARDS

OUTDOOR AREAS –

GUTTER AND CURB CONSTRUCTION

TURF GUTTERS

SCALE ⅛"= 1'-0"

DRAINAGE PLACED UNDER EDGE OF ROAD METAL

GUTTERS LOCATED OUTSIDE OF PAVEMENT

DRAINAGE PLACED UNDER GUTTER

EXTENDED PAVEMENT

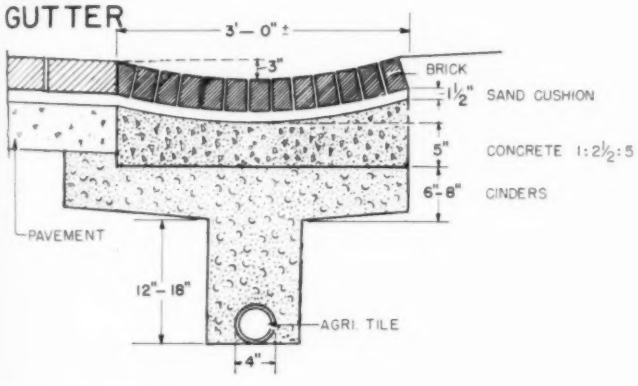
SCALE ⅛"= 1'-0"

GUTTERS LOCATED ONE HALF WITHIN THE PAVED ROAD SURFACE

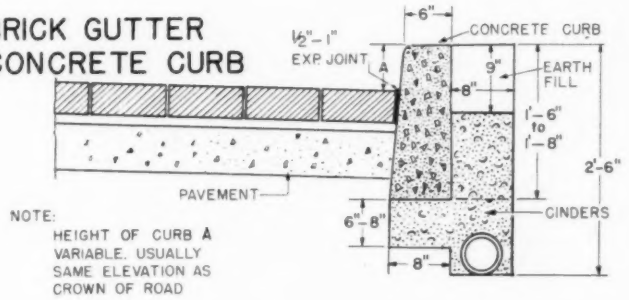
Note: This type not ordinarily practical

PAVEMENT EXTENDED TO FORM GUTTER

BRICK GUTTER

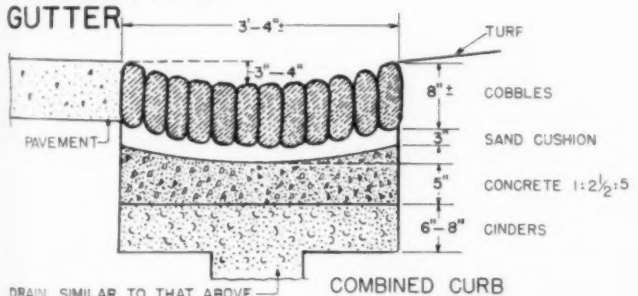


BRICK GUTTER CONCRETE CURB



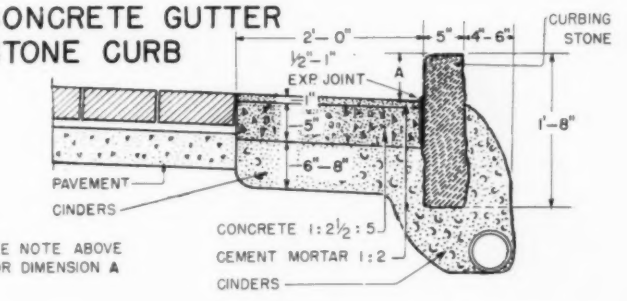
NOTE: HEIGHT OF CURB A VARIABLE. USUALLY SAME ELEVATION AS CROWN OF ROAD

COBBLESTONE GUTTER



COMBINED CURB AND GUTTER

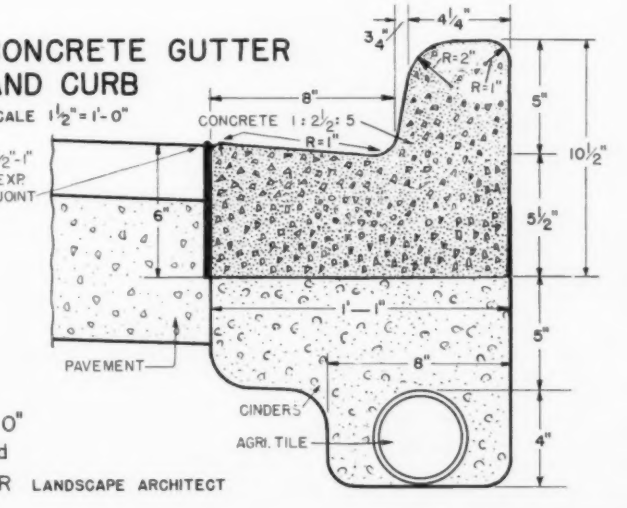
CONCRETE GUTTER STONE CURB



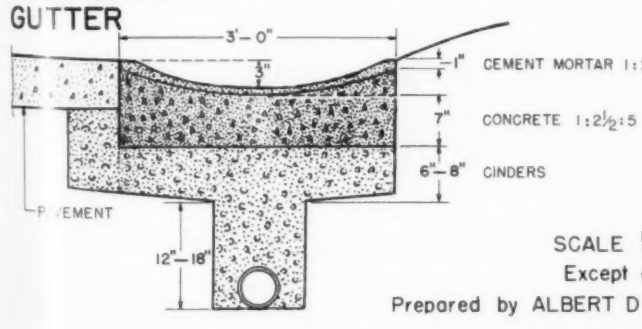
SEE NOTE ABOVE FOR DIMENSION A

CONCRETE GUTTER AND CURB

SCALE 1½"= 1'-0"



CONCRETE GUTTER



SCALE ½"= 1'-0"
Except as noted

Prepared by ALBERT D TAYLOR LANDSCAPE ARCHITECT

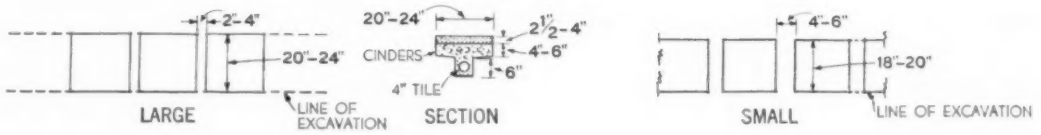
TIME-SAVER STANDARDS

OUTDOOR AREAS–

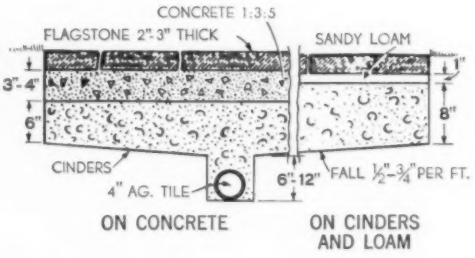
WALKWAY CONSTRUCTION

STEPPING STONES

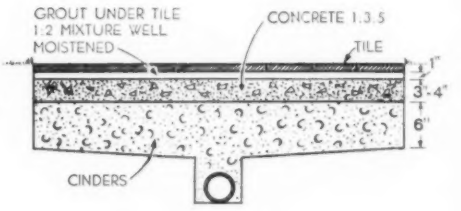
SCALE: $\frac{3}{16}$" = 1'-0"



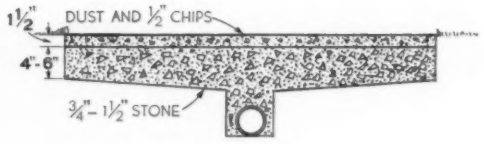
FLAGSTONE



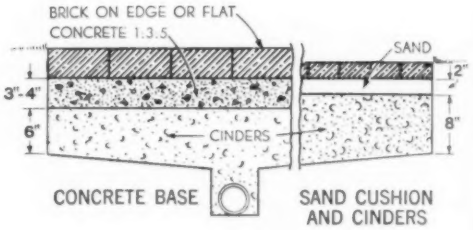
TILE (CONCRETE BASE)



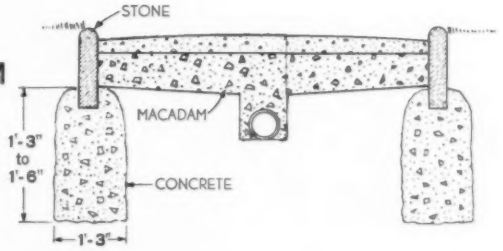
MACADAM OR GRAVEL



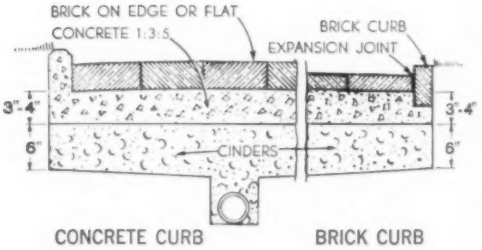
BRICK



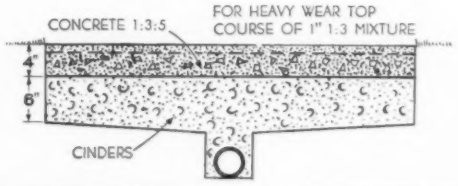
MACADAM (WITH CURBS)



BRICK (WITH CURBS)



CONCRETE (FROST RESISTING)



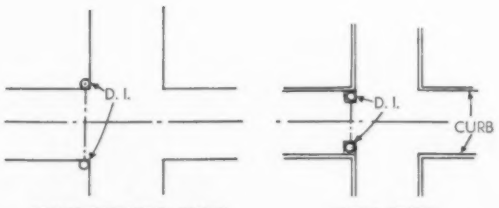
CONCRETE (NO FREEZING PROBLEM)

SCALE: ½" = 1'-0"

WALK DRAINAGE

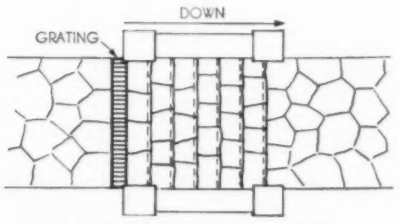
SURFACE PITCHED LATERALLY

SURFACE CROWNED (WIDE WALKS)



WALK WITHOUT CURB — WITH CURB

NO SCALE



GRATINGS ON SLOPING WALKS

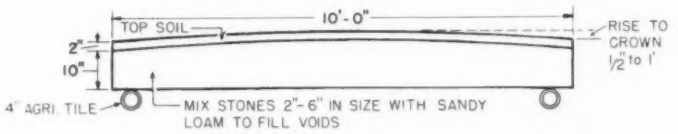
DRAIN INLET LOCATIONS

Prepared by A. D. TAYLOR LANDSCAPE ARCHITECT

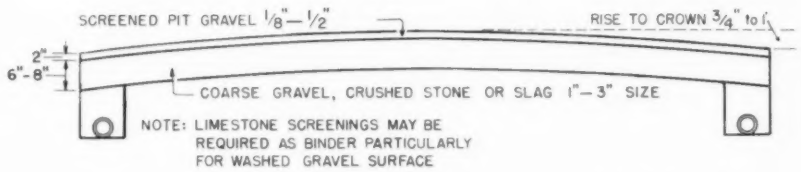
OUTDOOR AREAS–

DRIVEWAY CONSTRUCTION

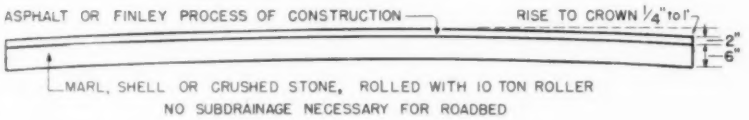
TURF DRIVE



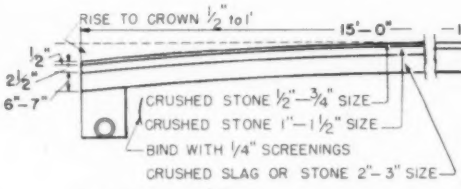
GRAVEL


SCREENED PIT GRAVEL 1/8"–1/2"
RISE TO CROWN 3/4" to 1'
2"
6"-8"
COARSE GRAVEL, CRUSHED STONE OR SLAG 1"–3" SIZE
NOTE: LIMESTONE SCREENINGS MAY BE REQUIRED AS BINDER PARTICULARLY FOR WASHED GRAVEL SURFACE

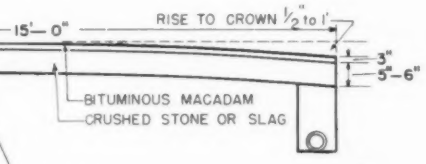
ASPHALT (OR FINLEY PROCESS)


ASPHALT OR FINLEY PROCESS OF CONSTRUCTION
RISE TO CROWN 1/4" to 1'
2"
6"
MARL, SHELL OR CRUSHED STONE, ROLLED WITH 10 TON ROLLER
NO SUBDRAINAGE NECESSARY FOR ROADBED

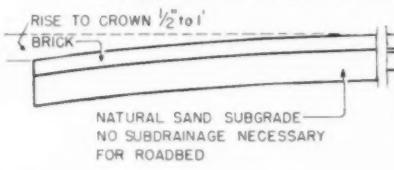
MACADAM WATERBOUND



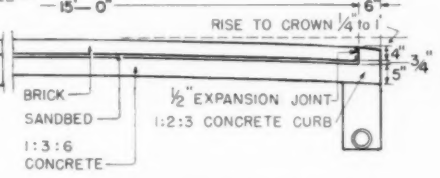
MACADAM BITUMINOUS



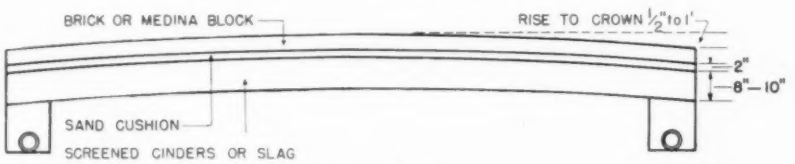
BRICK ON NATURAL SAND



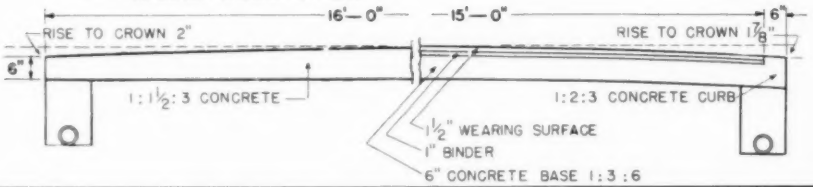
BRICK CONCRETE BED



BRICK OR MEDINA BLOCK ON CINDERS

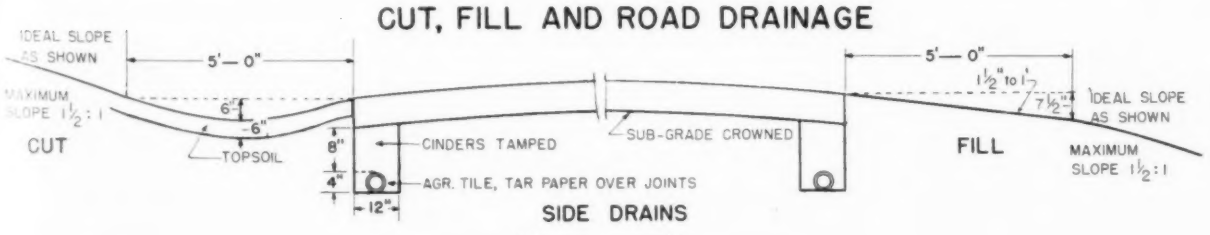


CONCRETE PLAIN

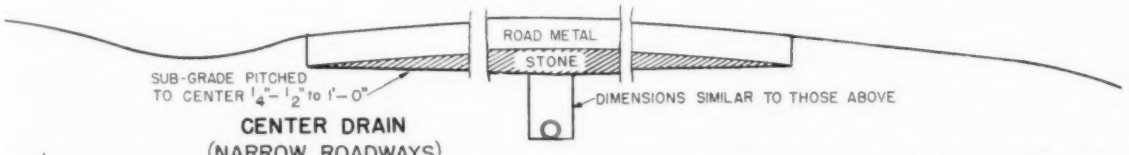


CONCRETE BITUMINOUS

CUT, FILL AND ROAD DRAINAGE



SIDE DRAINS



CENTER DRAIN
(NARROW ROADWAYS)

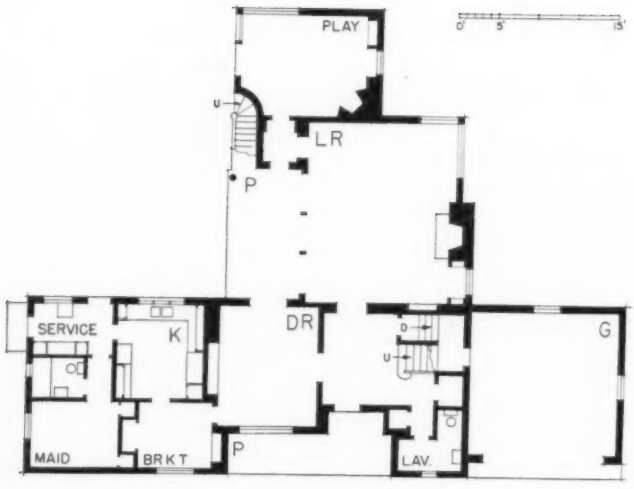
SCALE: 1/4" = 1'–0"

Prepared by A.D. TAYLOR LANDSCAPE ARCHITECT

Photos by Geo. D. Haight

House for Chester Lincoln, SAN MARINO, CALIFORNIA

H. ROY KELLEY
Architect



First floor

Second floor

Above, the patio, equipped for outdoor living and dining. At left, stairhall looking through the living room to the porch. An outdoor stair leads directly from the second floor balcony to the patio.

MATERIALS AND EQUIPMENT

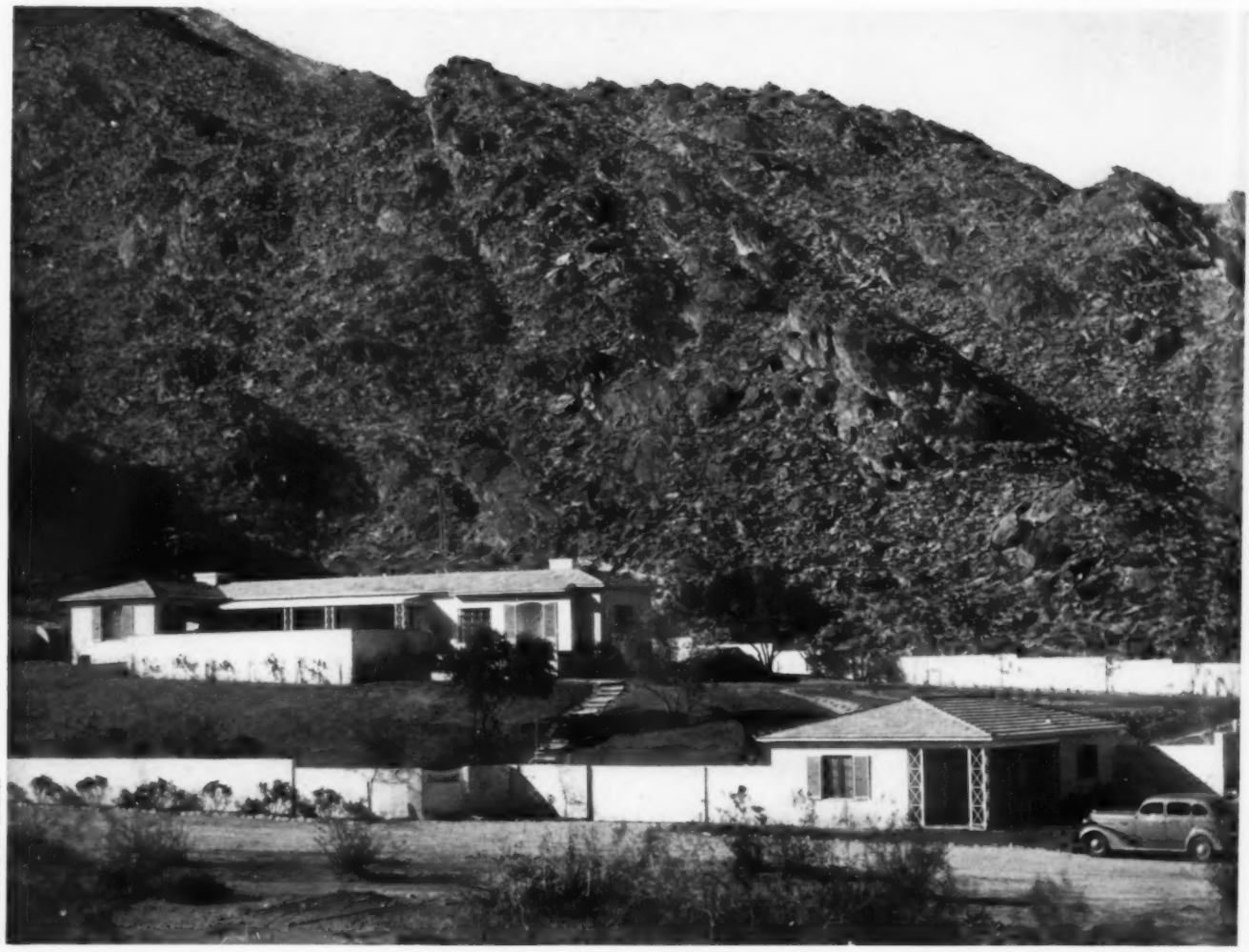
FOUNDATION
Concrete

EXTERIOR
Walls: Cement stucco, brick veneer over wood studs
Roof: Red cedar shingles
Insulation: Celotex lath, Celotex Corp.
Sash: Steel casements

INTERIOR
Walls: Wood studs and gypsum plaster; living room walls and trim, Philippine mahogany
Floors: Oak
Trim: White pine painted

EQUIPMENT
Heating: Hot-air furnaces
Plumbing: Fixtures, Standard Sanitary Mfg. Co.; galvanized steel pipes
Electrical installation: Conduit and safecote wire

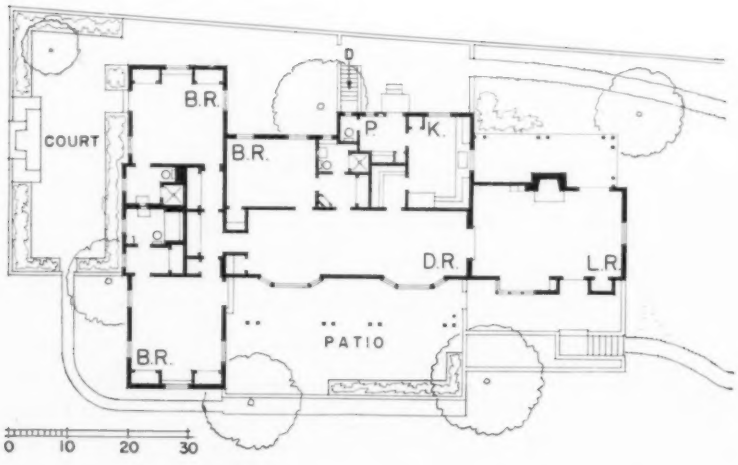
Actual cost, 36c per cubic foot. Architect estimates present cost at 42-44c



Photos by Matt Studio

House for J. E. French, PALM SPRINGS, CALIFORNIA

CHARLES O. MATCHAM
Architect



First floor and partial plot plan

MATERIALS AND EQUIPMENT

FOUNDATION
Concrete

STRUCTURE
Wood frame

EXTERIOR
Walls: Garden, hollow cement tile, Palm Springs Builders Supply Co.
Roof: Tile, Gladding, McBean & Co.
Sash: Steel, Truscon Steel Co.; awnings, wood louvred, Shutter Awning Co.
Insulation: Coast Insulating Co.
Doors: Garage, Overhead Door Co. of Southern California

INTERIOR
Walls: Plaster board lath, U. S. Gypsum Company; tile, Pomona Tile Co.; vertical boards in living room
Ceilings: Exposed rafters, plaster between, in living room; plaster elsewhere

EQUIPMENT
Heating and ventilating: Gas, forced air, Payne Furnace & Supply Co.; gas hot water heater, General Water Heater Co.
Plumbing: Fixtures, Standard Sanitary Mfg. Co.
Glass: Carrara, Pittsburgh Plate Glass Co.
Electrical installation: Lighting fixtures, Solar Lighting Fixture Co.
Linoleum: Armstrong Cork Co.

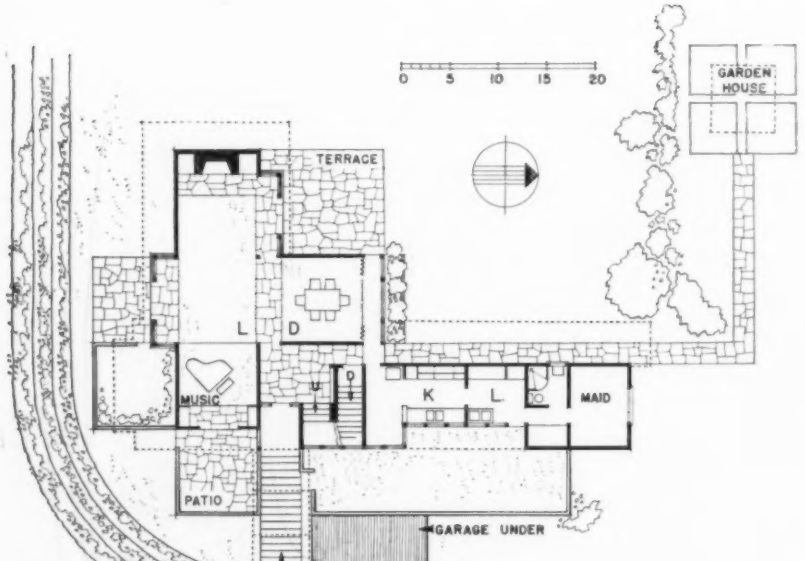
Cost, including garden walls, garage and servants' quarters over garage: $18,000

Garage seen in photo on opposite page also contains servants' quarters. Above, patio; below, left, dining bay; right, bedroom interior.

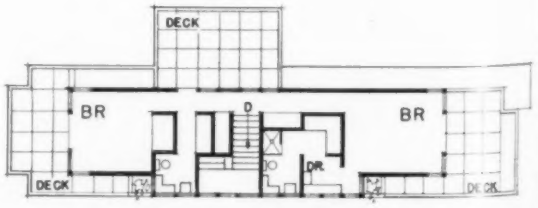
Photos by Fred R. Dapprich

House for Miss Helene Kershner, LOS ANGELES, CAL.

HARWELL HAMILTON HARRIS
Designer



THE LARGE WINDOWS shown in plan, and the use of flagstone within doors, serve to tie the house to the surroundings. Yet privacy from the highway is maintained, as can be seen above. The house crowns a hilltop; the living room's south bay overlooks a wide valley. The "garden house" contains guest accommodations, and is secluded behind planting.

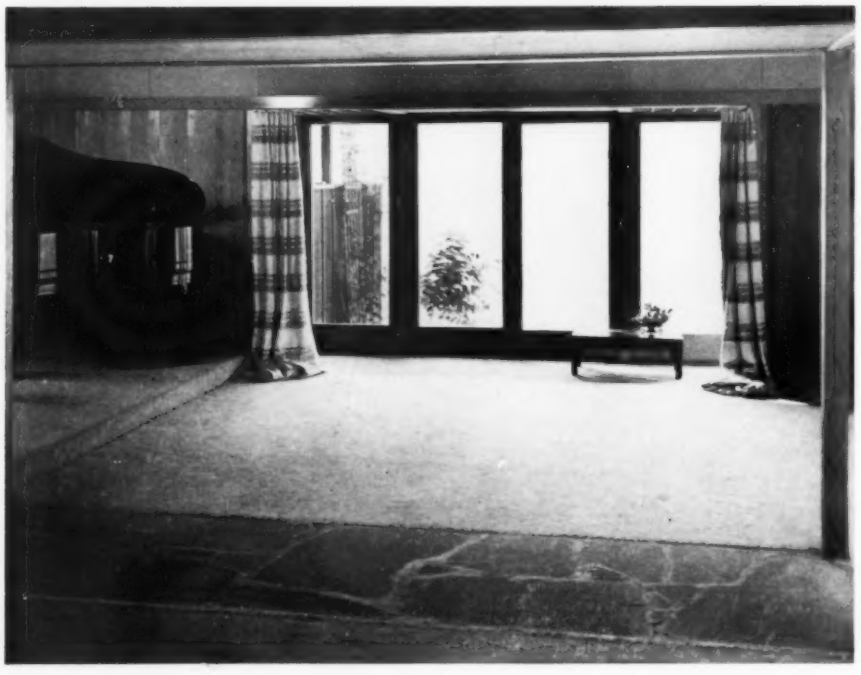


At left, first floor and plot plan; above, second floor plan

Changed ceiling levels and changes from carpet to flagstone on the floor divide the spaces, rather than partitions. Note the use of cove lighting in the dining area (top). At right, fireplace end of the general living space.

KERSHNER HOUSE, LOS ANGELES

Photos by Fred R. Dapprich



Top: the music room also serves as a stage. Its floor is slightly raised; the French door drapes can be drawn, or the doors opened so that the patio beyond forms the setting. Photo below also shows the south living room bay.

MATERIALS AND EQUIPMENT

FOUNDATION
Concrete

EXTERIOR
Walls: 12" redwood vertical boards and battens
Roof: Redwood shingles 4½" to the weather
Insulation: Celotex Corporation
Sash: Outswinging wood casement

INTERIOR
Walls: 10" T. & G. vertical redwood board walls, natural finish
Ceilings: "Celotex", Celotex Corporation.
Floors: 4" T. & G. Douglas fir

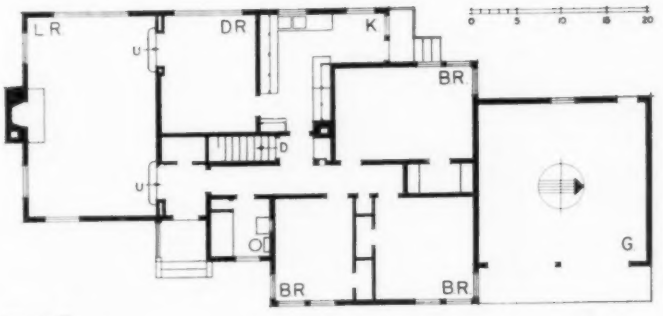
EQUIPMENT
Heating and air conditioning: "Thermador" electric radiant and convection heaters; "Thermador" electric water heater, Thermador Electrical Mfg. Co.
Plumbing: Pipes, galvanized iron; fixtures, Standard Sanitary Mfg. Co.
Kitchen: Refrigerator; electric range; water softener; washing machine; ironer
Electrical installation: Custom built radio and record playing system; lighting, integral reflector troughs and panels

Cost, including guest cottage, planting, etc., $15,000

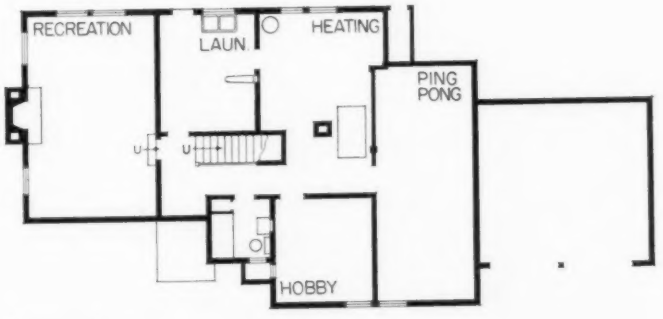
House for L. W. Ross, SEATTLE, WASHINGTON

SMITH, CARROLL and JOHANSON
Architects

ON A SLOPING LOT, all living areas are here located on the top floor, most of the basement being used for recreation areas.



First floor



Basement

MATERIALS AND EQUIPMENT

FOUNDATION
Concrete

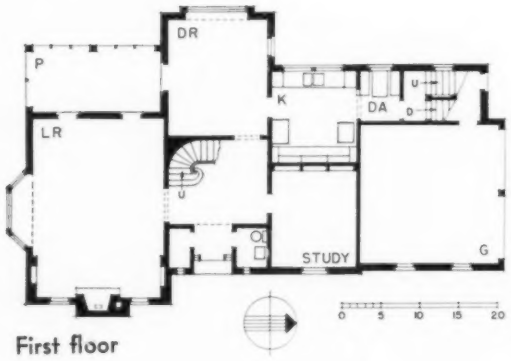
EXTERIOR
Walls: Beveled ¾" x 10" cedar siding
Roof: 16" Certigrade cedar shingles left natural
Insulation: Celotex lath on ceilings, Celotex Corporation
Sash: Wood

INTERIOR
Walls: Blue Diamond plaster on wood lath and studs
Floors: Oak in living portion; tile in bath; linoleum in kitchen, Armstrong Cork Products Co.
Finish: Fir, painted

EQUIPMENT
Heating and air conditioning: Rossoe
Plumbing: Pipe, galvanized iron; fixtures, Standard Sanitary Mfg. Co.
Kitchen: Range; refrigerator; provision for dishwasher
Miscellaneous: Illumination of grounds; firehose for emergency use
Lighting and wiring: Knob and tube system
Cost: 29c per cubic foot

House for J. O. Heppes, HINSDALE, ILLINOIS

CHILDS and SMITH
Architects



First floor

Second floor

MATERIALS AND EQUIPMENT

FOUNDATION
Plain concrete

STRUCTURE
Wood studs and wood roof framing

EXTERIOR
Walls: Wide wood siding and common brick veneer, first floor
Sash: Wood
Roof: Asphalt shingles
Insulation: Exterior walls and roof, wool batts, U. S. Gypsum Co.
Painting: Wood siding and frames, three coats lead and oil paint; common brick, first floor and chimneys, three coats Bondex, The Reardon Co.

INTERIOR
Floors: First floor hall, dining room, kitchen, dining alcove, rear entry, lavatory, bath rooms, children's playroom, asphalt tile, The Tile-Tex Co.; other floors, straight-sawed red oak
Walls: Kitchen, lavatory, bath rooms, asphalt wall tile, The Tile-Tex Co.; study, Nu-Wood, Wood Conversion Co.; other walls, smooth plaster.
Trim: enameled wood; study, straight-sawed white oak finished with two coats of Minwax, The Minwax Co.

Right, above, dining room; below, stairhall.

Painting: Walls and ceilings, three coats lead and oil paint; walls of living room, hall, dining room and bedrooms, papered; walls and ceilings of kitchen, bathroom and lavatory above wainscot, enameled.

EQUIPMENT

Heating: Oil-fired warm-air furnace with return duct system, General Electric Company.

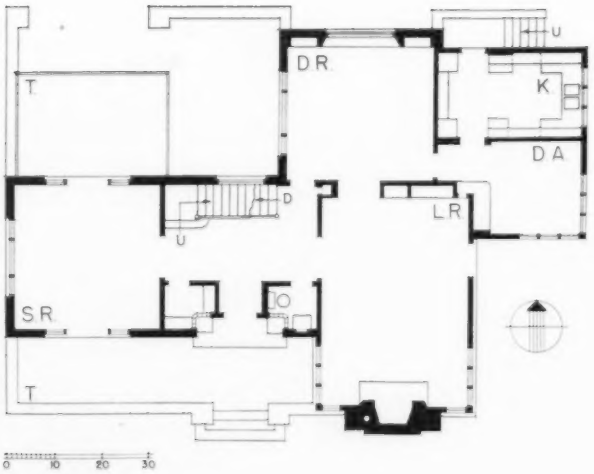
Plumbing: Fixtures, Kohler Co.

Electrical Installation: Wiring and fixtures, Cox Electric Co.

Hardware: Sargent & Company

Photos by Hedrich-Blessing Studio

House for Mrs. Fred J. Reynolds, GLENCOE, ILLINOIS **PERKINS, WHEELER and WILL Architects**



First floor

Second floor

At left, living terrace in the corner between dining and sun rooms; the screened porch awning roof is supported by the screen frames. Left, below, dining room.

MATERIALS AND EQUIPMENT

FOUNDATION

Continuous concrete walls and footings; waterproofing, A. C. Horn Co.

STRUCTURE

Wood frame

EXTERIOR

Walls: Hard burned select common brick; 1" x 8" cypress
Roof: Red cedar shingles, 5" to weather; Y. P. sheathing spaced 2"; flashing, gutters and leaders, 26 ga. "Toncan", Republic Steel Corp.
Sash: Wood double hung and casement
Doors: White pine; garage, lift type, McKee Door Co.
Insulation: Exterior walls, knee walls and roof, 3½" batts, U. S. Gypsum Co.
Painting: Lead and oil

INTERIOR

Walls: ⅜" Rocklath, 3 coats gypsum plaster; painted and papered
Floors: Living room, bedrooms and halls, 25/32" clear red oak; kitchen, edge grain fir; baths, ceramic tile, baths 1 and 2, edge grain fir, bath 4 and lavatory; porches, concrete; kitchen, bath 4 and lavatory, linoleum, Armstrong Cork Products Co.
Trim: White maple in principal first floor rooms, poplar elsewhere; doors, "Rezo" stock maple and birch, Paine Lumber Co.
Painting: Walls, lead and oil; kitchen and baths, enamel; ceilings, kalsomine; floor, stained and varnished; trim (maple), clear lacquer, (poplar), flat paint

EQUIPMENT

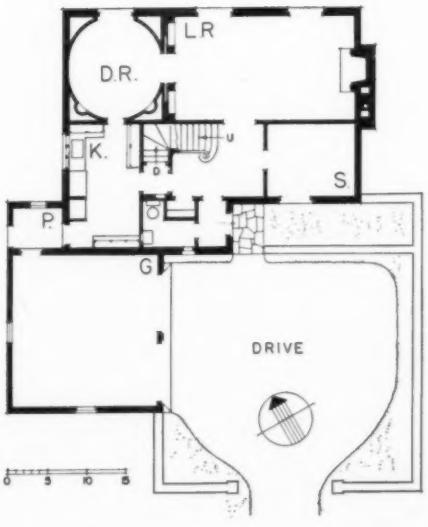
Heating and air conditioning: Forced warm air filtered, oil fired system, Herman Nelson Corp.; hot water heater, Williams Oil-O-Matic Heating Corp.; thermostat, Minneapolis-Honeywell Regulator Co.
Plumbing: Fixtures, Kohler Co.; supply pipes, galvanized steel; sump pump in basement, Chicago Pump Co.
Weatherstripping: Doors and windows, Chamberlain metal weatherstrips
Glass: Pittsburgh Plate Glass Co.; glass brick, Owens-Illinois Glass Co.
Hardware: Solid brass, Yale and Towne Manufacturing Co.
Electrical Installation: Rigid conduit wiring system; switches, Pass & Seymour, Inc.; fixtures, Walter G. Warren & Co.

Cost including fees, excluding land, landscaping, furnishings: $24,300

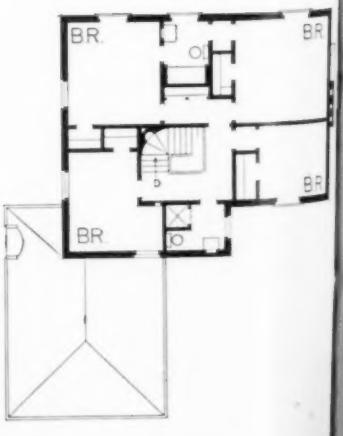
Photos by Robert W. Tebbs

House for Dr. H. A. Jarre, GROSSE POINTE FARMS, MICH. **HEWLETT and LUCKENBACH Architects**

Basement



First floor



Second floor

Above, living room interior
Below, stair detail

MATERIALS AND EQUIPMENT

FOUNDATION
Concrete block

STRUCTURE
Wood frame

EXTERIOR
Walls: Brick veneer
Roof: Wood shingle; "Toncan" sheet metal, Republic Steel Co.
Insulation: Side walls and second floor ceiling, rock wool, Johns Manville
Sash: Wood casement and copper screens
Painting: Exterior masonry, Medusa cement paint, Medusa Portland Cement Co.

INTERIOR
Floors: Oak strip finish; main hall, black asphalt tile; master bedroom, oak block; stair treads and nosings, sheet rubber; kitchen, linoleum
Painting: Main hall, light gray; study, turquoise blue; ceiling, off-white; kitchen walls, light gray, yellow ceiling; black floor in dining room. Pittsburgh "Wallhide" for interior undercoat, Pittsburgh Plate Glass Co.; "Ripolin" enamel, The Glidden Company; "Minwax" floor finish, Minwax Co., Inc.

EQUIPMENT
Heating: Air circulation, humidification, Gilbarco Air-Conditioning, Gilbert & Barker Mfg. Co.
Waterproofing: Asphaltic, exterior basement wall
Hardware: Dull chrome
Cost, house only: 37c per cu. ft.

Photos by Alexander Piaant

House for Albert J. Scheu, ST. LOUIS COUNTY, MISSOURI

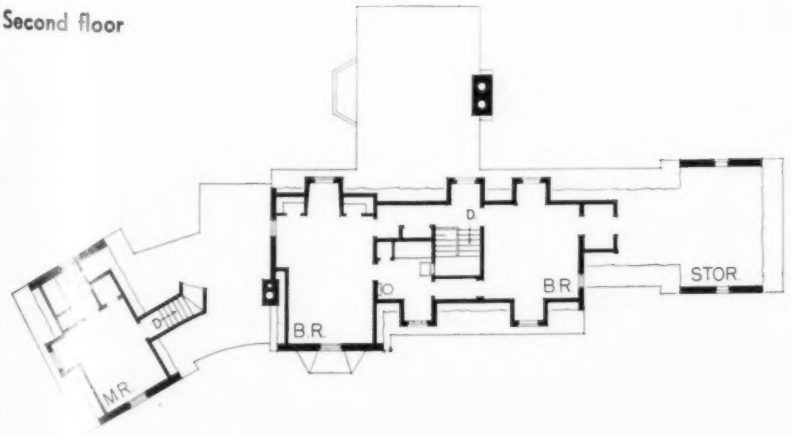
GRAY and PAULEY
Architects

First floor

Basement

Living room interior

Second floor



MATERIALS AND EQUIPMENT

FOUNDATION

Concrete walls

STRUCTURE

Reinforced concrete slab over entire first floor and garage; frame and veneer walls; wood roof framing

EXTERIOR

Walls: Brick, Hydraulic Press Brick Co.
Roof: Slate, weathering green; 16-oz. cold rolled copper sheet metal work
Insulation: Gimco rock wool batts, General Insulation & Manufacturing Co.
Painting: "Creo-Dipt" white brick paint, Creo-Dipt Co., Inc.

INTERIOR

Floors: Random width oak flooring on first floor; second floor, oak strip flooring. First floor, Wood Mosaic Co.; baths and lavatory, National Tile Co.
Trim: Poplar, enameled
Partitions: Wood with metal lath and plaster. Lath, Northwestern Expanded Metal Lath Co.; plaster, Acme Certainteed Products Co.
Doors: Overhead garage doors, McKee Door Co.

EQUIPMENT

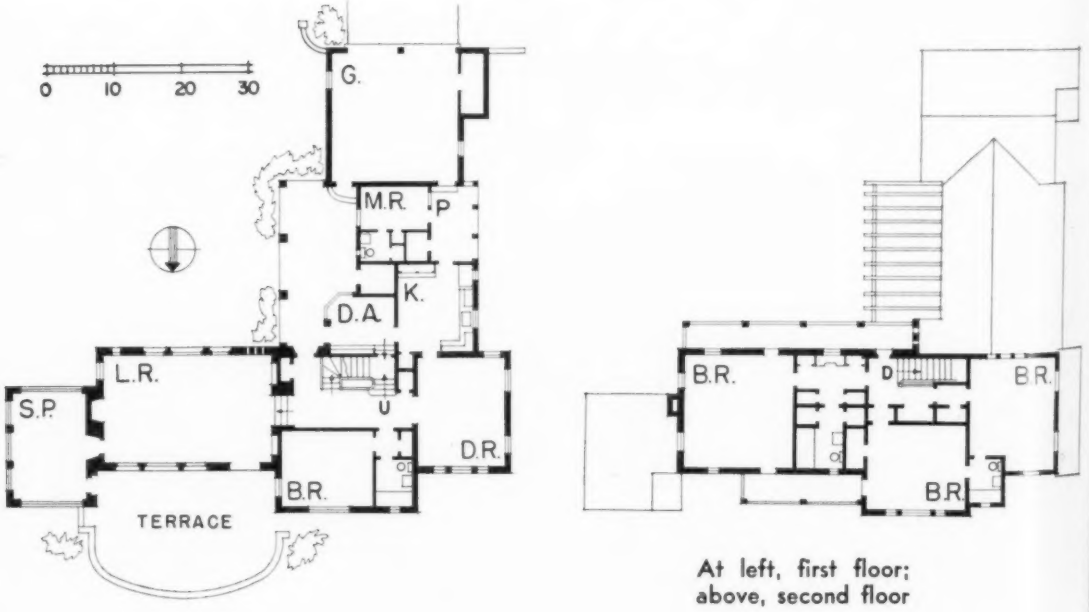
Heating: AFCO warm-air system with Century oil burner, American Furnace Co.; hot-water heater, Williams Oil-O-Matic Corp.
Weatherstripping: Monarch Weatherstrip Co.
Plumbing: Fixtures, Standard Sanitary Mfg. Co.

Cost, including fees: 41.9c per cubic foot

House for Hugh Akerman, ORLANDO, FLORIDA

MAURICE E. KRESSLY
Architect

THIS HOUSE lies between the road and Spring Lake; hence the principal living areas open toward the water view. Concrete block walls are exposed, indoors and out, and are painted. The color scheme is strong, sash being blue inside and out; walls, white; roof, variegated reds; and ceilings, formed by the exposed second-floor planking, stained red-brown.



At left, first floor; above, second floor

On facing page, lake front; above, entrance front; below, view through living room toward stair hall

MATERIALS AND EQUIPMENT

FOUNDATION

Concrete

STRUCTURE

Concrete block and frame

EXTERIOR

Walls: Specially textured concrete block generally, 4" x 16" face showing; second story cypress boards and battens
Sash: Metal casements, screened, Hope's Window's Inc.
Roof: Wood frame; pastel red variegated cement tile finish, Pittman-Sipple Tile Co.
Insulation: Roof, "Celotex", Celotex Corp.

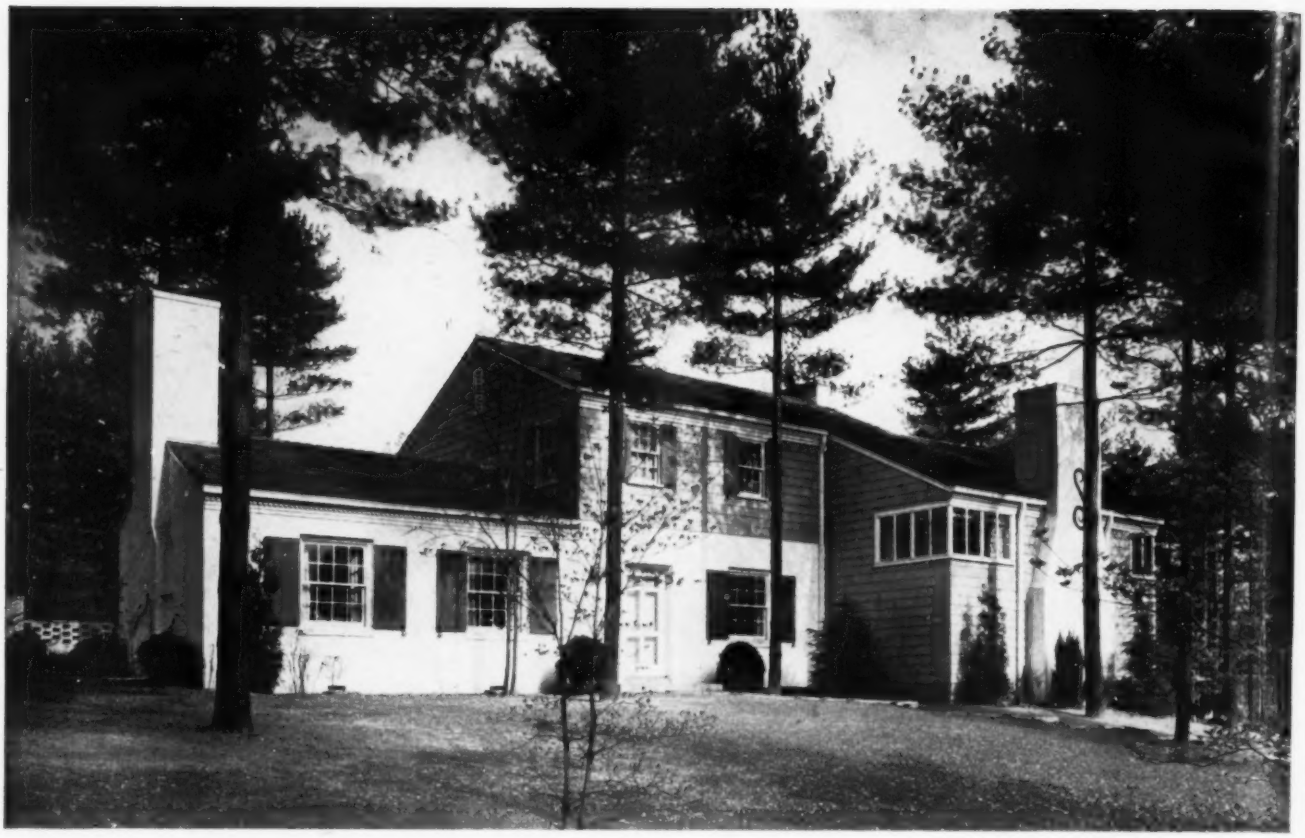
INTERIOR

Floors: On fill, 8" concrete slab; suspended, wood frame
Walls: Concrete block exposed and painted; baths, tile and plaster; remainder, plank and plaster
Ceilings: First floor, exposed beams and floor planking
Stairs: Solid Y.P. logs, wrought iron rail

EQUIPMENT

Heating: Waterman Waterbury furnace; A. B. C. blower; Williams Oil-O-Matic burner; Minneapolis-Honeywell temperature controls: "Solar" hot-water heater, General Electric auxiliary
Plumbing: Copper piping; fixtures, Standard Sanitary Mfg. Co.
Hardware: Russell & Erwin Mfg. Co.

Cost, including fees: $15,500



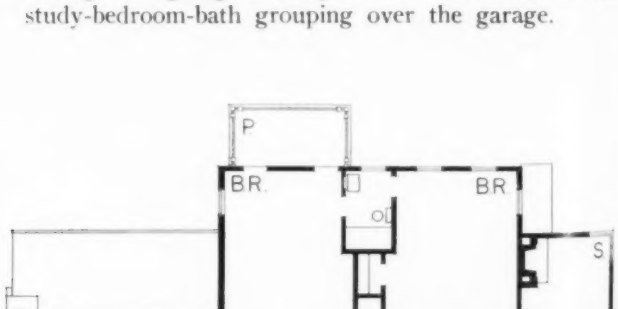
Photos by F. S. Lincoln

House for Miss Dorothy Greeno, BILTMORE FOREST, N. C.

HENRY IRVEN GAINES
Architect

NOTEWORTHY in these plans are the location of the maid's room, with a private exterior door and access through the garage directly to the front hall; and the study-bedroom-bath grouping over the garage.

First floor



Second floor

Top, end of living room; at right, second floor study

MATERIALS AND EQUIPMENT

FOUNDATION
Concrete footings, common brick walls

STRUCTURE
Wood frame

EXTERIOR
Walls: Common brick and red cedar shingles over frame
Sash: Wood windows; metal casements, Detroit Steel Products Co.; screens, "Rolscreen", Rolscreen Company
Roof: Clay tile, B. Mifflin Hood Co.; copper flashing; G. I. downspouts and gutters
Insulation: Rock wool in ceiling area, Johns-Manville
Painting: Shingles, Cabot's stain, Samuel Cabot, Inc.

INTERIOR
Walls: Plaster on wood lath, U. S. Gypsum Co.
Floors: Bathrooms, kitchen and breakfast room, linoleum, Armstrong Cork Products Co.; bathroom bases and wainscots, structural glass; other floors, oak.
Trim: White pine
Painting: Trim, colored "Minwax," Minwax Co., Inc.

EQUIPMENT
Heating: Forced warm air with filters, Fox Furnace Co.; stoker, Iron Fireman Manufacturing Co.
Plumbing: Fixtures, Standard Sanitary Mfg. Co.; kitchen sink, Tracy Mfg. Co.
Hardware: Russell & Erwin Mfg. Co.

Cost: $16,000

Photos by Ph. B. Wallace

House for Marcellus McLaughlin, GERMANTOWN, PA.

RICHARD W. MECASKEY
Architect

MATERIALS AND EQUIPMENT

FOUNDATION
Local stone

STRUCTURE
Local stone

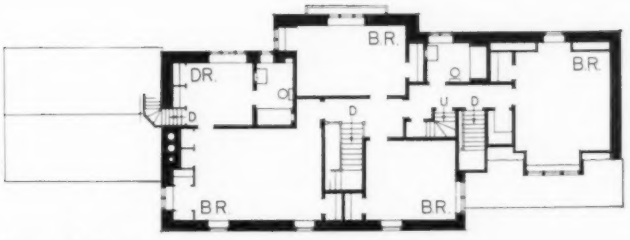
EXTERIOR
Roof: Slate, variegated thickness and color
Sash: Wood casement with leaded glass; built-in roll screens, Watson Screen Co.
Insulation: Rock wool 2" thick on all exterior walls, 4" over third floor ceiling and garage ceiling.
Painting: Stained and oiled wood work

INTERIOR
Floors: Living room, dining room, library and hall, random width oak, screwed and plugged; bedrooms and hall, white oak T & G, 2" face
Painting: Stained and waxed walnut paneled library and stair spandrel; all other interior woodwork painted.

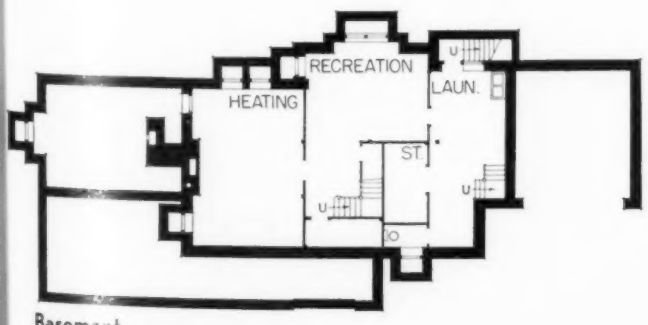
EQUIPMENT
Heating and air-conditioning: Air circulation and humidification, Gar Wood oil furnace and air-conditoning unit, Gar Wood Industries, Inc.
Plumbing: Copper tubing; fixtures, Crane Co.
Kitchen: Built-in kitchen range hood; ventilator, "The Range Ventor", Universal Blower Co.
Electrical Installation: Phone system of intercommunication, Philco

Cost: approx. 32c per cubic foot

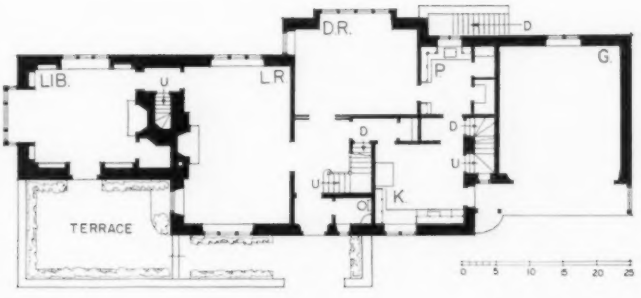
Interior of library



Second floor



Basement



First floor

Photos by George H. Van Ando

House for Dr. Louis E. Williams, MADISON, NEW JERSEY

PAUL W. DRAKE
Architect

THIS HOUSE includes a doctor's suite consisting of reception room, office and examination room. The suite has a private entrance, adjacent yet subordinated to the front door. The first floor lavatory can serve either doctor's suite or owner's rooms.

MATERIALS AND EQUIPMENT

STRUCTURE
Frame and brick veneer

EXTERIOR
Roof: Black slate, "Genuine Hard Vein Bangor," North Bangor Slate Co.; copper gutters, leaders and flashings
Sash: Double hung and casements, Andersen Corp.
Insulation: 4" Capitol rock wool, The Standard Lime & Stone Co.
Doors: Special and six panel Colonial, pine, painted; garage doors, overhead stock with Stanley hardware, The Stanley Works

INTERIOR
Walls: Plastered three coats over wire lath; main rooms papered; baths and kitchen, Franklin tiles; game room, pecky cypress
Doors: Special and six panel Colonial, pine, painted
Trim: Special and Curtis stock

EQUIPMENT
Heating: Gas fired unit, Fox Furnace Co.; winter air-conditioned heat; temperature controls, Minneapolis-Honeywell Regulator Co.; gas hot-water heater
Plumbing: Fixtures, Kohler Co.; water piping, American Brass Co.
Weatherstripping: Door and windows, metal
Electrical installation: Fixtures, A. Ward Hendrickson & Co.
Kitchen: Range, gas; refrigerator, General Electric Co.
Hardware: Colonial brass
Cost: 42c per cubic foot

The view from the north, above, shows screening of the service entry from living portions of the house. The small enclosed porch between the dining room and living porch is an auxiliary dining area.

Second floor

Basement

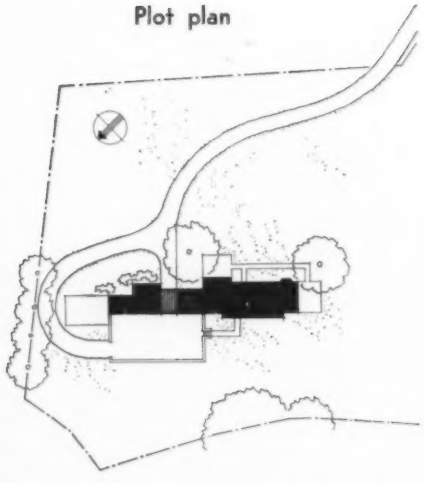
First floor

Photos by George H. Van Anda

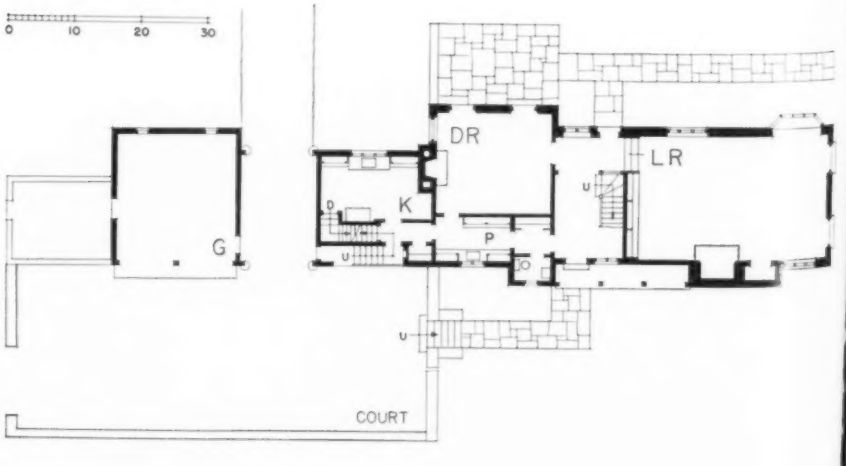
House for Mrs. Sonja S. Hohe, HARRISON, NEW YORK

JAMES JENNINGS BEVAN
Architect

Plot plan



Below, first floor; above, second floor



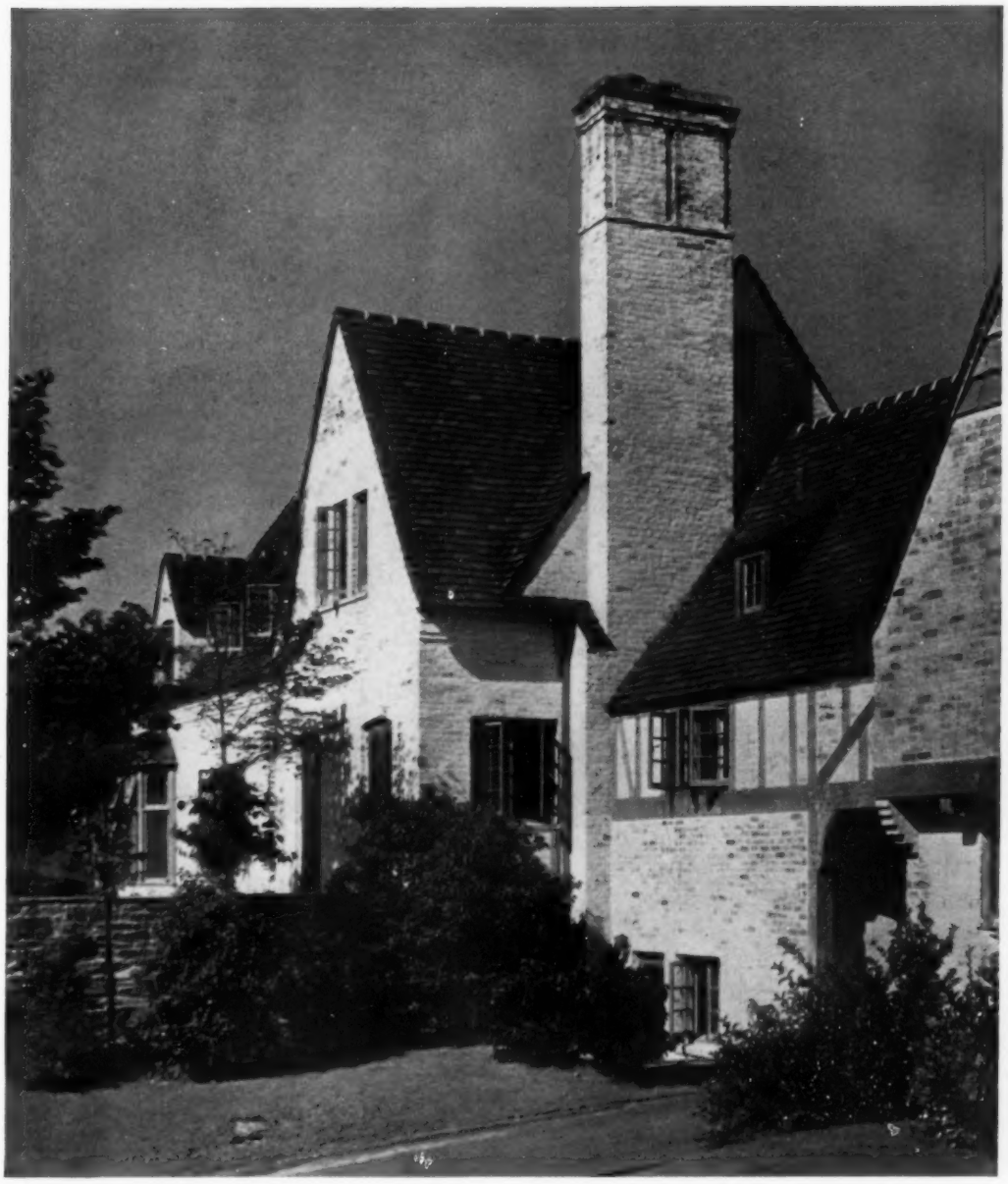


Photo on opposite page shows the courtyard front; above, detail of the entrance front, showing the driveway which passes through the building.

MATERIALS AND EQUIPMENT

FOUNDATION
Concrete footings and walls

STRUCTURE
Wood frame, brick veneer

EXTERIOR
Walls: Brick facing, painted; stucco at driveway
Sash: Steel casements, Lemco, Croft Steel Windows, Inc.
Roof: Tile, Ludowici-Celadon Co.
Insulation: Balsam-wool, Wood Conversion Co.

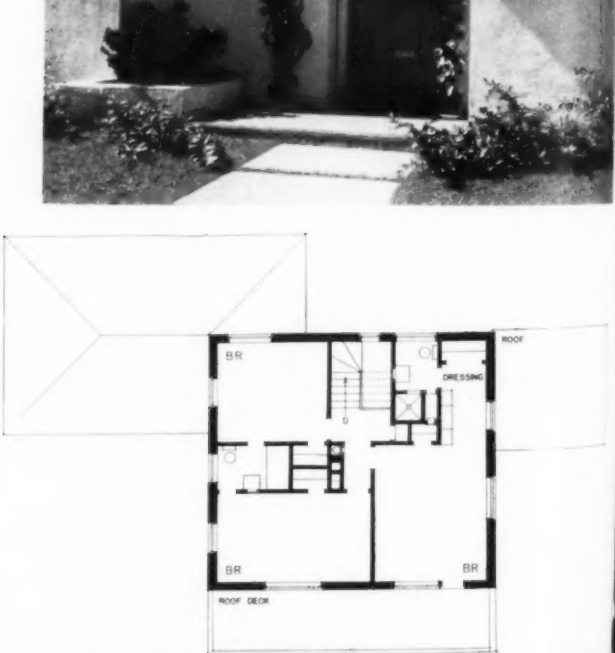
INTERIOR
Floors: Garage, cement; kitchen, Armstrong's linoleum; first floor hall, loggia, terraces, flagstone; baths, tile; remainder, hardwood
Walls: 2" x 4" studs and plaster; Jacobson ornament
Ceilings: Exposed oak beams in living room; plaster in remainder

EQUIPMENT
Heating: Boiler, Fitzgibbons Boiler Co., Inc.; radiation, American Radiator Co.; valves, Hoffman Specialty Co., Inc.
Hardware and lighting fixtures: Special, Charles Arcularius
Plumbing: Fixtures, Standard Sanitary Mfg. Co.; medicine cabinets and accessories, Hoegger, Inc.
Fireplaces: Dampers, H. W. Covert Co.
Incinerator: Kerner Incinerator Co.

Photos by Rollin W. Bailey

House for Edward Melnick
BROOKLINE, MASS.

SAMUEL GLASER
Architect



Plans: at left, first floor; above, second floor. Photos: top, garden elevation; center, detail front entrance

MATERIALS AND EQUIPMENT

FOUNDATION
Concrete blocks 12" thick and filled with cement

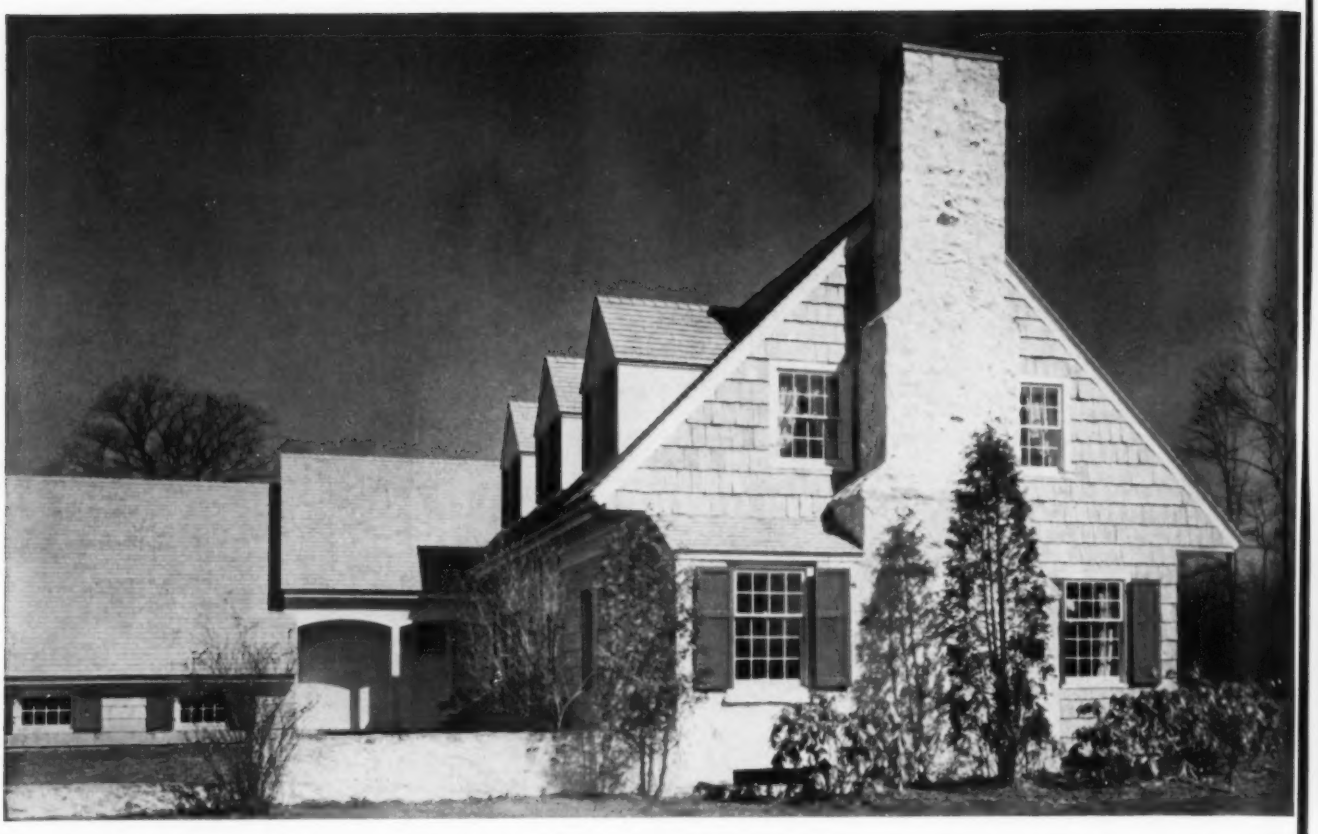
STRUCTURE
Cinder concrete, reinforced concrete beams and lintels; pre-cast concrete joists and reinforced concrete floors

EXTERIOR
Walls: Cinder concrete walls, covered with 1" Portland cement stucco, skim coat, California Stucco Products Co.; glass block, Corning-Pittsburgh Plate Glass Co.
Sash: Steel, Detroit Steel Products Co.
Roof: Thick butt asphalt shingles Bird & Son, Inc.; built-up deck
Doors: Wood to detail
Insulation: Walls, double airspace and Reynolds metallation, type B, Reynolds Corp.; ceiling under roof, 4" rock wool, U. S. Gypsum Co.

INTERIOR
Floors: Linoleum, Congoleum-Nairn, Inc.
Walls: Wood stud, gypsum lath, painted plaster
Ceilings: Wire lath and painted plaster
Doors: "Rezo" flush, Paine Lumber Co.

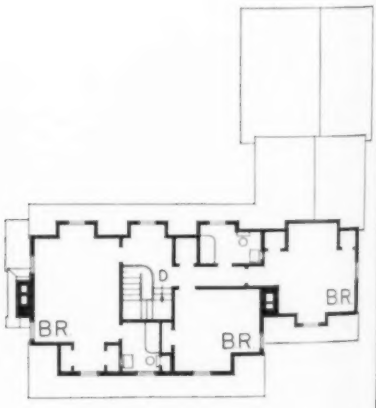
EQUIPMENT
Heating: Winter air-conditioning system, Moncrief
Plumbing: Fixtures, Briggs steel; copper hot and cold water supplies
Incinerator: First floor feed, Kerner Incinerator Co.
Kitchen: Electric refrigerator, Norge; electric range, Westinghouse Electric & Manufacturing Co.
Cost: 42c per cubic foot

There are many interesting points about this house. Indicated in the first floor plan: undercover access to garage through a secondary hall; maid's bath, also accessible as first floor lavatory; screen partition between dining and living areas. The built-in flower box in the living room is shown at the top of this page; lower photograph, view from dining into living areas, shows built-in china, linen and silver cupboards.

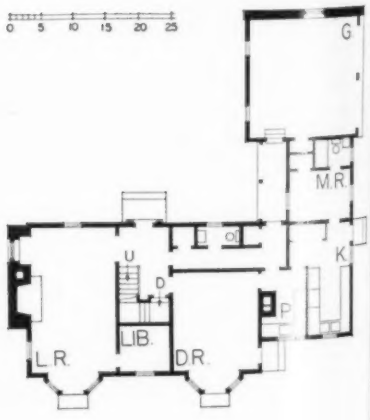


House for John C. Smith, NEW CANAAN, CONNECTICUT

WALTER BRADNEE KIRBY
Architect



Second floor



First floor

MATERIALS AND EQUIPMENT

FOUNDATION
Monolithic waterproof concrete

STRUCTURE
Wood frame

EXTERIOR
Walls: Hand rived cypress shingles
Insulation: Exterior walls and second-story ceiling completely enveloped in rock wool

INTERIOR
Walls: 2" by 4" stud, plastered
Floors: Oak

EQUIPMENT
Heating: Scott Newcomb air-conditioning system, Home Oil Co.
Plumbing: Fixtures, Standard Sanitary Mfg. Co.; brass piping
Electrical installation: Fixtures, Portchester Lighting Fixture Corp.
Kitchen: Stainless steel sinks; metal cabinets, Bradley Kitchen Cabinet Co.; linoleum counter tops; electric range, Westinghouse Electric and Manufacturing Co.; domestic hot-water heater, Westinghouse Electric and Manufacturing Co.

Cost: $22,000

NIPPY NIGHTS

USE 'INCOR' · · · AVOID FROST RISK · · · SAVE MONEY, TOO

FALL is the time to be on your guard against frost damage. When weather gets really cold, you're ready for it. But sunny Fall days fool you; nights turn cold suddenly—unless you're prepared, frost may nip the concrete.

Be on the safe side. Heat mixing water; use 'Incor' 24-Hour Cement; protect the placed concrete promptly to avoid heat loss. *For overnight service strength, simply maintain curing temperatures at about 70°.*

'Incor', a more thoroughly processed Portland cement, gains strength faster, is safe from freezing days sooner; that saves heating expense, cuts costs all along the line. Dependable high early strength, and strong, durable concrete, too—*proved by 'Incor's 11-year service record.*

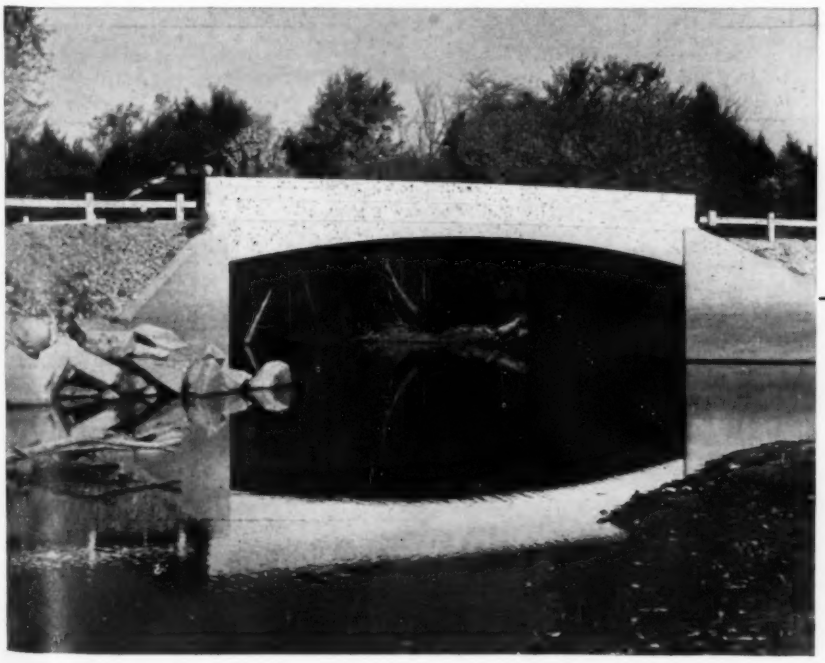


Figure 'Incor's* cold-weather advantages on work now under way. Write for copy of "Cold-Weather Concreting." Lone Star Cement Corporation, Room 2289, 342 Madison Avenue, New York.

*Reg. U. S. Pat. Off.

'INCOR' SAVED 12 DAYS, $300, when used for footings, abutments and arch of Fowler River Bridge, Bristol, N.H. Placed over 8 years ago, in cool Fall weather. Today, all concrete in excellent condition.

Typical of 'Incor's 11-year record . . . under hard service and difficult exposure conditions.

LONE STAR CEMENT CORPORATION

MAKERS OF LONE STAR CEMENT · · · 'INCOR' 24-HOUR CEMENT

Review of New Books

(Continued from page 75)

1938, Second Edition. 224 pages. Price, $2.50.

A REARRANGED, somewhat expanded edition of a textbook first issued in 1931.

STRUCTURAL ALUMINUM HANDBOOK. Issued by The Aluminum Company of America, 1938. 211 pages. Text, tables, charts, diagrams. Price, $1.25.

A COMPREHENSIVE handbook on the design of aluminum alloy structures. The following data on aluminum alloy shapes are included: characteristics, manufacture, properties, working stresses, design considerations, formulae, elements of sections, and other technical data.

ENGINEERING TERMINOLOGY. By Victor J. Brown, C.E., and Delmar G. Runner, A.B., A.M. Gillette Publishing Co., Chicago, First Edition, 1938. 310 pages. Drawings, diagrams, halftones. Price, $3.50.

A COMPREHENSIVE dictionary of terms used in various branches of engineering, in which definitions and symbols were compiled with the assistance of trade, manufacturing, engineering associations, and government bureaus. Appendices include English - Spanish, Spanish - English, and German - English engineering dictionaries.

FURNISHING THE SMALL HOME. By Margaret Merivale. The Studios Publications, Inc., New York, 1938. Photographs and their explanations. 7¾ x 10 in. 96 pages. Price $2.50.

THERE ARE approximately 175 various photographs in this book covering the entire range of furnishing a small apartment in the simplified modern manner.

Included are numerous photos on individual features of the home, such as: space-saving units for cocktail and dish cabinets, practical chests for storing linen, utilitarian desk and bookcase combinations; not to mention all the other dual-purpose units which are so needed in present-day apartment-house life. Some pages are devoted to modern table settings and other decorative dining-room features.

Miss Merivale has kept a close eye to the restrictions on space, to the limited amount of money which can be spent, and to high standards of convenience and comfort which her arrangements have to offer. Most of the room plans shown are by English designers and decorators, although other Continental designs are included among the pictures.

There is very little shown on American trends, except for the modern kitchen, but certain phases of English apartment-house furnishing as illustrated have some definitely helpful hints for the American apartment-house dweller.

Columbia
Venetian Blinds

IT is well to remember when specifying Columbia Venetian BLINDS that there are two general classifications from which to make a selection. There is the "Residential", and the "Controlite", each built for special purposes. Be sure to specify the correct blind. Special detailed drawings have been prepared which are very helpful when writing specifications for each classification.

Write for your portfolio of "Architectural Data Sheets"

THE COLUMBIA MILLS, Inc., 225 Fifth Ave., New York

Manufacturers' Publications

Doors and windows

Balanced, the 5400 *Exit Bolt for Double Doors.* Sargent and Greenleaf, Inc., Rochester, N. Y.

Doors and Entrances in Aluminum or Bronze, Series 700. The Kawneer Co., Niles, Mich.

Hope's Detention Windows. Hope's Windows, Inc., Jamestown, N. Y.

Now High Visibility. Van Kannel Revolving Door Co., 101 Park Ave., New York, N. Y.

(Continued on page 130)

from the KOH-I-NOOR *Sketch Book*

It's A Gift . . .

And a gift your suburban friend will greatly appreciate. Whether he owns or rents his house, he'll be proud to have an 'original' drawing of it. If you haven't the time or the inclination to make a sketch 'on the spot,' take a snapshot. In your final drawing, don't omit even a door-knob; your friend will be sure to comment.

In the above drawing, I tried for a crisp, clean handling, using KOH-I-NOOR Drawing Pencils on plate-finish drawing bristol. The chisel-edge was used throughout, except in the case of the grass; this was toned in with a 2B pencil held at a very slight angle with the paper. I find the chisel-edge, frequently sharpened on a sandpaper pad or fine steel file, is the most satisfactory way to transfer graphite to paper.

The most difficult parts of this drawing, strangely, were the white spaces in the foliage in the lower right hand corner. These white spaces require skill and thought to properly place them. It is the presence of these whites which give professional drawings that enviable sparkle and dash. To bring them out requires, of course, that there be something dark put behind them; and this negative way of drawing a thing is a little trying on the pencil-pusher.

Julian Michele

This is the ninth of a series of drawings by Mr. Julian Michele. Others will follow from time to time.

KOH-I-NOOR DRAWING PENCILS
FROM OUR NEW AMERICAN FACTORY
NOW
10 CENTS EACH • • $1.00 PER DOZEN

Koh-I-Noor Pencil Company, Inc. 373 Fourth Avenue, New York

Uniform as Grenadiers of the Guard!

YOU cannot afford to use drawing pencils which are not accurately graded — nor pencils that are not uniform. Even a speck of grit in your pencil may ruin the effect of your drawing.
That is why Mars Lumograph is the standard of so many artists, architects, draftsmen, engineers — Mars Lumograph can be depended on for perfect work — always — without a thought being given to the quality of the pencil while you are working.

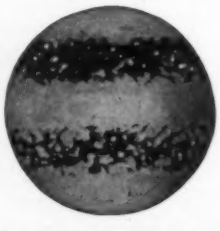
BETTER Reproductions Direct From Drawings

Mars Lumograph contains a secret light absorbing element that adds to the natural opacity of its finely ground, perfectly mixed, choice graphite particles. The result is more solid, denser lines — approaching ink in their opaqueness — and producing perfect reproductions direct from pencil drawings without inking in.

This one feature alone makes Mars Lumograph the superior pencil where time, work and money savings are important. But Mars Lumograph is also a strong, long lasting, non-smudging, clean erasing pencil that will delight you to use. Try one or a dozen—from your dealer or us. 17 true degrees—from ExExB to 7H — 15c. each — $1.50 the dozen.

J. S. STAEDTLER, Inc.
53-55 Worth St., New York

Photomicrograph of Lumograph line (upper), and other drawing pencil (lower); Proving Lumograph's superior opacity.



MARS LUMOGRAPH

Manufacturer's Publications

(Continued from page 128)

Residence Hardware. P. & F. Corbin, New Britain, Conn.

Windows—Wood, Sheet No. 24. Andersen Corp., Bayport, Minn.

Heating and ventilating

Adsco Heat Economizers, Bulletin No. 35-76. American District Steam Co., North Tonawanda, N. Y.

Fitzgibbons Special 80 *Directaire, Direct Fired Air Conditioner.* Fitzgibbons Boiler Co., Inc., 101 Park Ave., New York, N. Y.

Program and Progress. Anthracite Industries, Inc., Chrysler Building, New York, N. Y.

Silentaire, Modern Low-Cost Conditioning of the Air You Breathe. Berger Manufacturing Division, Republic Steel Corp., Canton, Ohio.

Trane Air, Convectors for Apartment Houses and Housing Projects, Bulletin S328. The Trane Co., La Crosse, Wis.

Wayne Air Conditioning, Automatic Heating. Wayne Oil Burner Corp., Fort Wayne, Ind. Price, $1.

Materials and equipment

Announcing Bakelite Cellulose—Acetate, Rainbow-Hued Materials. Bakelite Corp., 247 Park Ave., New York, N. Y.

Armored Concrete and Standard Construction Castings, Catalog No. 109. Flockhart Foundry Co., Newark, N. J.

Disciplined Control for Classroom Wardrobes with the Eldoorobe. Diebold Safe & Lock Co., Canton, Ohio.

Industrial Micarta Plate, Rod, Tubing, Angles and Channels, Descriptive Data 63-020. Westinghouse Electric and Manufacturing Co., Micarta Division, Trafford, Pa.

Is It Costing You Too Much to Heat Water? Revere Copper and Brass, Inc., 230 Park Ave., New York, N. Y.

Now Insulated Glass Blocks in Color. Marks Bros., Inc., 470-80 E. 133 St., New York, N. Y.

Rid Your Showers of Their Greatest Menace. Josam Manufacturing Co., Empire Building, Cleveland, Ohio.

The New Coronova, Security Bathtubs. The Crane Co., 836 S. Michigan Ave., Chicago, Ill.

3 New Group Washing Developments. Bradley Washfountain Co., Milwaukee, Wis.

Structural systems and parts

Bar-Z-System, Non-Bearing Partitions, Free Standing Wall Furring. The Consolidated Expanded Metal Co's., Wheeling, W. Va.

Metal Buildings. Columbian Steel Tank Co., Kansas City, Mo.

Milcor Steel Stud for Hollow Partition Construction. Milcor Steel Co., Milwaukee, Wis.

Electrical equipment and lighting

Daybrite Lighting Equipment, Bulletin F, and Pages 115 *to* 118. Daybrite Lighting, Inc., 5401 Bulwer Ave., St. Louis, Mo.

Explosion-Proof Reflectors, Globes and Guards. Schedule 2, *Page* 128 *A*-1. Benjamin Electric Mfg. Co., Des Plaines, Ill.

Plastic Lighting Comes of Age. Reprint of symposium in this issue of ARCHITECTURAL RECORD. Beetleware Division, American Cyanamid & Chemical Corp., R.C.A. Bldg., New York, N. Y.

Thermionic Amplifier for pH and Other Potential Measurements in High Resistance Circuits, Catalog E-00A, 1938. Leeds & Northrup Co., 4907 Stenton Ave., Philadelphia, Pa.

Floors, walls and roofs

Building Accessories for Masonry, for Floors, Walls and Doorways. Floor Accessories Co., Inc., Philadelphia, Pa.

Heavy Duty Flooring and Roofing Plank. Southern Pine Association, New Orleans, La.

Zenitherm — an Aristocratic Material for Walls and Floors. Zenitherm Products, Inc., 101 Park Ave., New York, N. Y.

General

Basic Principles of Healthful Housing, Preliminary Report, from American Journal of Public Health and The Nation's Health, for March, 1938. American Public Health Association, 50 W. 50 St., New York, N. Y.

Structural Aluminum Handbook. Aluminum Company of America Pittsburgh, Pa. Price, $1.25.

FORMICA

Brings a Building Lobby UP TO DATE!

This striking job in red Formica shows how simply an old-fashioned marble lobby can be brought up-to-the-minute by the use of flat surfaces of Formica. It is an extremely useful material for modern effects . . . There are more than 70 colors and patterns, including linen finishes, and irregular effects of many sorts. There are several surfaces, high gloss, satin, morocco. Inlays of one color over another or of metal make attractive simple designs of all kinds possible . . . Let us send you all the facts.

● **BEFORE:** This photograph shows the lobby of the office building at 261 Broadway, New York as it was a few months ago — an attractive marble treatment in good condition, but old-fashioned.

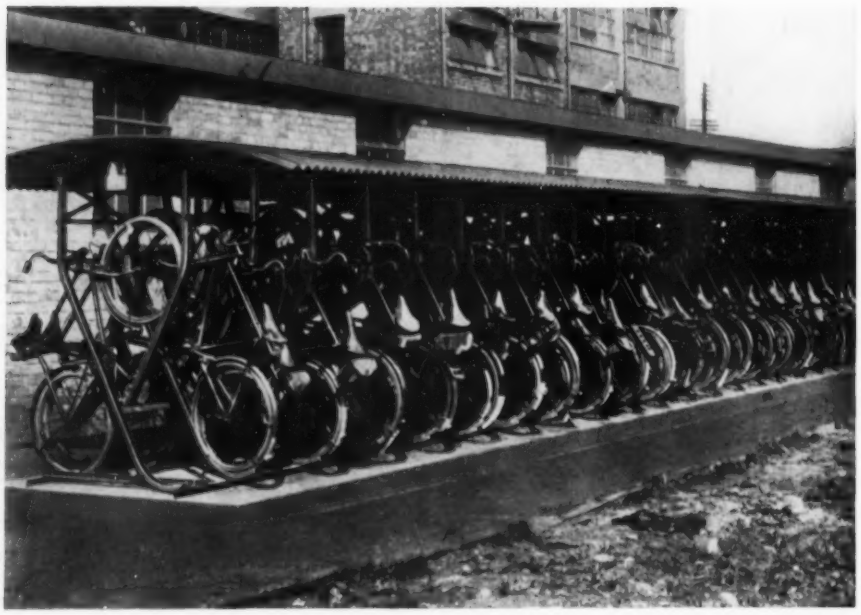
● **AFTER:** This photograph shows how the same lobby was thoroughly modernized by Eugene Schoen, architect, by the use of Formica refinishing stock on asbestos, and metal trim.

THE FORMICA INSULATION CO.
4620 Spring Grove Avenue
Cincinnati, Ohio

FORMICA

FOR BUILDING PURPOSES

Trend Notes (Continued from page 87)



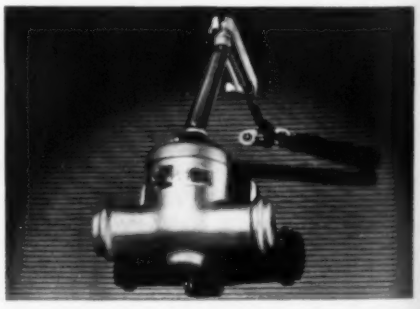
Wallace & Gilbett, Ltd.

An increasing number of bicyclists in England has necessitated provision of public cycle parks; even the London Underground maintains such accommodations on platforms convenient to its trains. Maximum accommodation for bicycles in minimum space is provided by these all-steel Cycle Parks, manufactured by Constructors, Ltd., Birmingham, England. The company makes several types of parks—horizontal and sloping, single and double sided—and maintains a planning department for solution of special problems. Shown above is a double-sided, sloping Cycle Park; arrangement of wheel-channels, on which bicycles rest while parked, is such that each cycle occupies 6 in., barely the width of the saddle. Unit construction is a feature of the Cycle Park, so that growing needs can be accommodated.

the paint to any desired "flavor". Aside from keeping insects off newly painted surfaces, "its aroma will remain long after paint has dried". . . . Scented rooms are also promised by experiments now being carried on by Carrier Corporation. Recent installations in pine- and cypress-panelled rooms indicate that scents from fragrant woods may be recovered by conditioned air. . . .

A semi-transparent, semi-opalescent paint for repairing integrally colored cement floors is announced by O. W. Ten Eyck (33 Liberty St., New York City). Designed specifically for repairing areas where color is worn away, the new paint can be tinted any color, is said to be long-lived and hard-wearing. . . . Flexrock Company (800 N. Delaware Ave., Philadelphia) announces an improved non-skid floor wax. Designed for either hard or soft surfaces, *Flexrock* wax nevertheless retains a high gloss and—according to its manufacturers—is long lived and low cost. . . . Also intent on non-skid surfaces is Brunswick-Balke-Collender (Chicago), whose new *Rubberceptor* one-piece shower pan boasts a "slip-proof tread". Coming in one size only—36" x 36"—*Rubberceptor* is of moulded non-oxidizing rubber; equipped with chromium drain and finishing strip, it is adaptable to all construction conditions. Total weight is less than 50 lbs.

In bringing out its new door closer (below), Lockwood Hardware Mfg. Company (Fitchburg, Mass.) presents the first ball bearing surface-type closer to appear on the market. In order to overcome the familiar hazard of fluid leakage into the spring chamber, with its resultant loss of checking power and its dangerous strain on shaft and arm, Lockwood engineers have developed an entirely new principle of gland construction. Capillary creeping cannot start, and the need for an air chamber is eliminated. This leak-proof feature, for which Lockwood has requested a patent, rules out one of the greatest sources of door trouble.



MODERNIZE
and
ECONOMIZE with
Detroit Stokers

- FOR LOWER STEAM COSTS
- FOR ALL OPERATING CONDITIONS
- FOR ALL BOILERS
- FOR ALL BITUMINOUS COALS

DETROIT STOKER COMPANY
Sales and Engineering Offices:
Fifth Floor, General Motors Building, Detroit, Michigan
Works at Monroe, Michigan . . . District Offices in Principal Cities
BUILT IN CANADA AT LONDON, ONTARIO